Department of Commerce • National Oceanic & Atmospheric Administration • National Weather Service

NATIONAL WEATHER SERVICE INSTRUCTION 10-504
OCTOBER 1, 2002

Operations and Services
Public Weather Services, NWSPD 10-5

NATIONAL PUBLIC WEATHER FORECAST PRODUCTS SPECIFICATION

NOTICE: This publication is available at: http://www.nws.noaa.gov/directives/

OPR: W/OS22 (D. Young) **Certified by:** W/OS22 (J. Lee)
Type of Issuance: Initial.

SUMMARY OF REVISIONS: This directive supersedes the following:

Weather Service Operations Manual (WSOM) Chapter C-20, "National Public Weather Products," Issuance 92-9, dated August 31, 1992 (*ref.* Selected Cities Weather Summary and Forecasts, Travelers' Forecasts);

WSOM Chapter C-45, "Meteorological Discussions and Forecast Coordination," Issuance 94-12, (*ref*. Extended Forecast Discussion, 12- to 48-Hour Prognostic Discussion), dated 09/28/94;

OML 4-95, filed with C-20, "Ultraviolet Index (UVI) Forecasts," dated 6/15/95;

OML 6-95, filed with C-20, "National Weather Summary, Canadian Urban Forecasts and Additions to the Foreign Temperature and Weather Table," (*ref*. Canadian Urban Forecasts), dated 10/1/95.

signed 10/01/02

Gregory A. Mandt Date
Director, Office of Climate,
Water, and Weather Services

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1. **Introduction**. This procedural instruction describes narrative, tabular and graphical weather products issued by multiple National Centers for Environmental Prediction (NCEP) offices and Alaska Region offices. The Canadian Urban Forecast, issued by the Meteorological Service of Canada, and retransmitted by the NWS, is included for domestic public interests.

2. **Model Diagnostic Discussion (product category HMD)**.

2.1 Mission Connection. Hydrometeorological Prediction Center (HPC) issues the model diagnostic discussion that provides an evaluation of the analyses of the three primary models (Eta, NGM, AVN), a review of model trends and biases and a description of model differences and preferences. This guidance is used by CONUS NWS field offices and the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public and aviation weather programs.

2.2 Issuance Guidelines.

2.2.1 Creation Software. HPC uses commercial text editor software.

2.2.2 Issuance Criteria. This is a routine, schedule-driven product.

2.2.3 Issuance Time. 0530 and 1730 UTC.

2.2.4 Valid Time. 0000 UTC Day 1 to 1200 UTC Day 2.

2.2.5 Product Expiration Time. Product expires with the next issuance.

2.3 Technical Description. The short range prognostic discussion should follow the format and content described in this section.

2.3.1 MND Broadcast Line. Not applicable.

2.3.2 MND Header. The MND header is "MODEL DIAGNOSTIC DISCUSSION."

2.3.3 Content. A narrative that may use standard National Weather Service abbreviations to provide an evaluation of the Eta, NGM and AVN for Day 1 and Day 2. Denotes quality of model initializations, model trends, and preferred models for various regions of the CONUS.

2.3.4 Format.

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FXUS10 KWNH 090530
PMDHMD

MODEL DIAGNOSTIC DISCUSSION
NATIONAL CENTERS FOR ENVIRONMENTAL PREDICTION
HYDROMETEOROLOGICAL PREDICTION CENTER...NWS...CAMP SPRINGS MD
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125 AM EDT TUE APR 9 2002

PRODUCT VALID APR 9/0000 UTC THRU APR 11/1200 UTC

MODEL INITIALIZATION...

THE 00 UTC AVN INITIALIZED PRECIPITABLE WATER (PW) VALUES TOO HIGH
ACRS SRN LA AND ADJ SW MS.  THE RAOB AT KJAN HAD A PW OF 1.15 INCHES
WHILE THE AVN ANALYSIS IS JUST OVER 1.5 INCHES.  THE RAOB AT KLCH HAD A
PW OF 0.88 INCHES WHILE THE AVN INITIAL ANALYSIS WAS NR 1.1 INCHES.


MODEL TRENDS...

THE ETA'S 500B HEIGHTS ARE CONSISTENTLY LOWER ACRS THE EASTERN
US...WITHOUT MUCH CHANGE IN FORWARD MOTION...AMPLITUDE...OR
WAVELENGTH OF TROUGHS.

THE ETA LOWERS HEIGHTS/PRESSURES SLIGHTLY FASTER ACRS THE N PLAINS
AND UPPER MS VALLEY 36-48 HRS.

THE ETA AND AVN HAVE SIGNIFICANTLY REDUCED THE AMPLITUDE OF THE MID
LVL RIDGE APPROACHING THE WEST COAST 48-60 HRS AND BEYOND.  THE SFC
REFLECTION SHOWED BOTH MODELS MAINTAINING A BETTER DEFINED SFC
TROF OVER THE ADJACENT NORTHEAST PACIFIC OFF WA/OR/N CA.

THE AVN IS SLIGHTLY FASTER MOVG SFC HIGH PRESSURE ACRS QUEBEC/NEW
ENGLAND 48-60 HRS.


MODEL DIFFERENCES AND PREFERENCES...

THE 12Z ECMWF IS SLOWER THAN THE ETA/AVN IN MOVG THE DP LYR TROF OUT
OF THE ROCKIES ACRS THE PLAINS 48-60 HRS....AS WAS THE COMBINED SHORT
RANGE ENSEMBLE MEAN 500 MB HEIGHTS.  THE CANADIAN HAS MORE OF
NORTHEAST TO SOUTHWEST ORIENTATION OF THE SHORTWAVE AXIS...BUT
WITH LOWER HEIGHTS ACRS THE N PLAINS/CNTRL ROCKIES VS THE ETA/AVN.
THE 00Z UKMET WAS SIMILAR TO THE AVN.  WE RECOMMEND USING A MULTI-MODEL
CONSENSUS ON TIMING AND AMPLITUDE.

THE AVN PRODUCES A LIKELY SPURIOUS 500 MB CYCLONIC VORTICITY MAXIMA
AND BULLS EYE IN THE 700-500 VV FIELD IN RESPONSE TO LIKELY GRID SCALE
FEEDBACK NR THE AREA OF HVY RAIN OVR THE FL PANHANDLE.  THESE
VORTICITY AND VV MAXIMA SLOWLY DISSIPATE THROUGH 36 HRS.  WE PREFER
THE MORE CONSISTENT ETA MODEL.

ANOTHER LIKELY SPURIOUS CYCLONIC VORTICITY MAXIMA AND BULLS EYE IN
THE 700-500 VV FIELD IS FCST BY THE AVN 48-60 HRS ACRS EAST SD ACRS TO
EAST CENTRAL MN.

PETERSEN/FORECAST OPERATIONS BRANCH

MODEL BIASES AVAILABLE AT  http://www.hpc.ncep.noaa.gov/html/model2.html
NNNN
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2.4 Updates, Amendments, and Corrections. No updates. HPC will correct for format and grammatical errors as required.

3. **Short Range Prognostic Discussion (product category SPD)**.

3.1 Mission Connection. HPC issues a short range discussion that provides the meteorological reasoning behind the Surface Fronts and Pressure Charts (section 12) and the Surface Instantaneous Precipitation Charts (section 13) graphical products. This guidance is used by CONUS NWS field offices and the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public and aviation weather programs.

3.2 Issuance Guidelines.

3.2.1 Creation Software. HPC uses commercial text editor software.

3.2.2 Issuance Criteria. This is a routine, schedule-driven product.

3.2.3 Issuance Time. 0700 and 1915 UTC.

3.2.4 Valid Time. 0000 UTC Day 1 to 1200 UTC Day 2 for 0700 UTC issuance, and 1200 UTC Day 1 to 0000 UTC Day 3 for 1915 UTC.

3.2.5 Product Expiration Time. Product expires with the next issuance.

3.3 Technical Description. The short range prognostic discussion should follow the format and content described in this section.

3.3.1 MND Broadcast Line. Not applicable.

3.3.2 MND Header. The MND header is "NCEP PROGNOSTIC DISCUSSION."

3.3.3 Content. A narrative that may use standard NWS abbreviations that describes the meteorological reasoning for the location of significant weather features and precipitation across the contiguous US for the next 12-48 hours.

3.3.4 Format.

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FXUS01 KWBC 101915
PMDSPD

NCEP PROGNOSTIC DISCUSSION FROM 1200Z THU 10 JAN 2002
HYDROMETEOROLOGICAL PREDICTION CENTER/NCEP/NWS
REF 12 TO 48HR MANUAL GRAPHICS
0215 PM EST THU JAN 10 2002

THE BROAD UPR TROF IN THE NERN QRTR OF THE CONUS SHUD EXPAND SWD
THIS PD AS THE WEAK UPR TROF CURRENTLY PASSING THRU BC TRACKS
THRU THE WRN NA RIDGE AND DROPS INTO THE BROAD TROF...FORCING THE
SPOKE OF THE TROF STRETCHED FROM THE CNTRL ROCKIES THRU THE NE
SEWD.  PCPN IS ORGANIZED ALONG THE MID LVL SHEAR ZONE ASSOC WITH
THE SPOKE IN THE BROAD TROF.  XPCT THIS TO CONTINUE THRU THE PD.
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THE STRONGEST SHRTWV WITHIN THE SPOKE IN THE TROF SHUD SWING
THRU THE UPR/MID MS VLY THU NITE AND THRU THE NRN MID ATL FRI.
INCREASED LIFT ASSOC WITH THE SHRTWV SHUD PROVIDE BKN RA ON ITS
LEADING EDGE OVER THE SRN OH VLY TNGT AND PUSHING THRU THE CNTRL
APLCHNS BY MID MORN FRI.  NOT XPCTING MIXED OR FZN PCPN WITH THE
SYS CONSIDERING THE WARM AIR AHEAD OF IT.  SCT SHRA SHUD SWEEP
SEWD THRU THE LWR MS/TN VLYS OVERNITE FRI NITE.  ON DAY 2...LOOK FOR
THE SFC BNDRY TO SLOW ITS SWD ADVANCEMENT NEAR THE FL/GA BORDER
AS ITS SUPPORTING UPR SYS PULLS OUT TO SEA.  XPCT SCT SHRA NEAR THE
BNDRY FROM THE CNTRL GULF COAST TO THE NRN SE COAST.  MEANWHILE...
SCT PCPN IS ALSO PSBL IN THE GRTLKS/NE WITH THIS SHRTWV WITHIN THE
SPOKE IN THE BROAD TROF.  SCT PCPN...WITH THE NRN PORTION OF IT
XPCTD TO BE SN...OVER THE U.P./NRN MI THU NITE.  FRI...THE PCPN SHUD
MOVE INTO THE WRN NE WHERE IT IS XPCTD TO FALL AS SN.  A SHOT OF
ARCTIC ENERGY IS XPCTD TO BARREL SEWD ALONG THE WRN SHORE OF
HUDSON BAY...SWEEPING THRU THE NE ON DAY 2.  XPCT THE ARCTIC SFC
BNDRY TO EDGE INTO THE NE BY THE END OF THE PD.  MORE SCT SN SHUD
MOVE THRU THE GRTLKS AND INTO THE NE FRI.  THE WEAK UPR TROF
BATTLING THE WRN NA RIDGE THIS PD SHUD SPILL ENERGY INTO THE NRN
PLAINS FRI...MOVING INTO THE MS VLY SAT MORN.  SCT SN IS XPCTD TO
SPREAD EWD ALONG THE ARCTIC BNDRY OVER THE GRLTKS AHEAD OF THE
SYS ON DAY 2.  THE SHRTWV SINKING THRU THE ERN GR BASIN SHUD PASS
THRU THE FOUR CORNERS ON ITS WAY TO MEX ON DAY 1 WHERE IT IS XPCTD
TO MEET UP WITH THE SHRTWV SLOWLY TREKKING EWD THRU NWRN MEX.
SCT MT SHSN/VLY SHRA IS XPCTD IN NM AND ERN AZ WITH THE SYS.  ON DAY
2...THE ENERGY IS XPCTD TO SINK EVEN FURTHER SWD INTO MEX.  LOOK FOR
THE SYS TO TAP INTO THE MID LVL MSTR S OF THE SHEAR ZONE...WITH SCT
SHRA PSBL ON THE S TX COAST.  LOOK FOR THE NEXT SYS OUT OF THE PAC
TO PASS INTO BC/PAC NW BY SAT MORN.   MOSTLY SCT PCPN IS XPCTD IN
THE NW/NRN ROCKIES ON DAY 2 WITH RELATIVELY WARM BL TEMPS UNDER
THE WRN NA RIDGE KEEPING SN LVLS HI.

CLARK/FORECAST OPERATIONS BRANCH
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3.4 Updates, Amendments, and Corrections. This product is not updated or amended. HPC will correct for format and grammatical errors as required.

4. **Extended Forecast Discussion (product category EPD)**.

4.1 Mission Connection. HPC issues an extended range discussion that provides the meteorological reasoning behind the Days 3-7 Surface Progs (section 19) and Days 3-7 Temperature/Precipitation Forecast Anomalies (section 20) graphical products. This guidance is used by CONUS and Alaskan NWS field offices and the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public and aviation weather programs.

4.2 Issuance Guidelines.

4.2.1 Creation Software. HPC uses commercial text editor software.

4.2.2 Issuance Criteria. This is a routine, schedule-driven product.

4.2.3 Issuance Time. 1830 UTC.

4.2.4 Valid Time. 1200 UTC Day 3 to 1200 UTC Day 7.

4.2.5 Product Expiration Time. Product expires with next product issuance.

4.3 Technical Description. The Extended Forecast Discussion should follow the format and content described in this section.

4.3.1 MND Broadcast Line. Not applicable.

4.3.2 MND Header. The MND header is, "EXTENDED FORECAST DISCUSSION."

4.3.3 Content. This is a text product that describes the meteorological reasoning of the forecaster behind the generation of the Days 3 - 7 Surface Progs and Days 3 - 7 24-Hour PoP Anomaly forecasts for CONUS and Alaska.

4.3.4 Format.

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FXUS02 KWBC 081830
PMDEPD

EXTENDED FORECAST DISCUSSION FOR 11 APR THRU 15 APR 2002
HYDROMETEOROLOGICAL PREDICTION CENTER...NCEP...NWS...WASHINGTON DC
1:30 PM EST TUE 08 APR 2002

A STRONG MEAN UPPER RIDGE WILL DOMINATE MOST OF THE ERN HALF OF THE
CONUS OVER THE NEXT 7 DAYS.  THE BULK OF THE ENERGY IN THE POLAR
WESTERLIES WILL BE FAR N IN CANADA...EXCEPT FOR A STREAM COMING INTO
THE W COAST STATES THAT GRADUALLY WORKS IT WAY ACROSS THE CONUS
DURING THE MEDIUM RANGE PERIOD.

FROM 00Z MODEL DATA...IT APPEARED THAT THE TROUBLESOME PART OF THIS
FORECAST WILL BE WHAT HAPPENS TO THE SRN PORTION OF THE NEXT MAJOR
IMPULSE DROPPING INTO THE WRN STATES DAYS 3-5....AND ITS POSSIBLE INTER-
ACTION WITH THE TAIL END OF ANOTHER IMPULSE UPSTREAM ENTERING THE W
COAST DAY 5.  NEW 12Z/08 AVN AND UKMET GUIDANCE HAVE TAKEN A DECIDED
TURN TOWARDS THE MORE PROGRESSIVE SCENARIO OFFERED BY THE MRF
ENSEMBLE MEAN...CONFIRMING OUR EARLIER THOUGHTS.

THE 00Z/08 MRF HAD CHANGED CONTINUITY FROM PREVIOUS RUNS BY CLOSING
OFF AN UPPER LOW OVER THE CENTRAL INTERMOUNTAIN REGION LATER DAY
3...DROPPING IT S INTO EXTREME NRN MEXICO DAY 5.  THIS WAS MUCH FARTHER
W  THAN ITS PREVIOUS RUN.  THE LATEST ECMWF RUN WAS ALSO SLOWER DAY 5
WITH THE EWD TRANSLATION OF THIS FEATURE...BUT NOT TO THE EXTENT OF
THE MRF.  THE EXTREMELY SLOW...SWD SUPPRESSED MRF UPPER LOW DRIFTING
ACROSS THE US/MEXICAN BORDER WAS STRONGLY OPPOSED BY THE MRF
ENSEMBLE MEAN....AND TO A LESSER EXTENT BY THE 00Z/08 CANADIAN AND
MRFX.  OUR EARLIER SUSPICIONS WERE VINDICATED BY THE 12Z/08 AVN RUN.  WE
ACCEPTED THE NEW AVN RUN ALL THE WAY THROUGH DAY 7 AS IT TRENDED
TOWARDS THE MRF ENSEMBLE MEAN AND WAS BASED ON THE LATEST INFO.

OVER THE PACIFIC NW...THE MEAN FLOW BECOMES BROADLY CYCLONIC AFTER A
STRONG IMPULSE COMES INTO THE PACIFIC NW LATER DAY 5.  MRF ENSEMBLE
MEAN SHOWS CONSIDERABLE UNCERTAINTY IN NAILING DOWN ANY IMPULSES
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MOVING THRU THE FAST CYCLONIC FLOW ENTERING THE NW COAST DAYS 6-7.
THE ONLY CHANGE OFFERED BY THE NEW 12Z/08 AVN RUN WAS TO SHOW MORE
AMPLITUDE TO A SHORTWAVE COMING INTO THE INTERMOUNTAIN REGION DAY 7.

...REGIONAL HIGHLIGHTS DAYS 3-7...

...THE ROCKIES TO THE ATLANTIC COAST...

HIGH PRES WILL DOMINATE THE NE TOWARDS THE END OF THIS WEEK IN LINE
WITH THE LATEST MRF...THE MRF ENSEMBLE MEAN...AND OTHER MODELS.  NEW
AVN SHOWED A WEAK WARM FRONTAL WAVE DEVELOPING OVER ERN NC DAYS
4-5.  THIS WAVE HAS SOME MRF CONTINUITY AND WEAK UPPER SHEAR VORTICITY
TO SUPPORT IT.  MANUAL PROGS RAISED QPF/POPS OVER NC AND THE SRN MID
ATLANTIC STATES WITH THIS FEATURE.

NOT SURPRISINGLY THE MORE PROGRESSIVE FORECAST OF THE NEW AVN WITH
THE NEXT UPSTREAM SYS...WHICH WE ACCEPTED...MAKES FOR A MUCH
DIFFERENT PCPN FORECAST THAN THAT OF THE MRF.  WE ACCEPTED THE NEW
AVN PCPN FORECAST AS A WAVY FRONTAL SYS PUSHES SLOWLY EWD THRU THE
MS VLY DAYS 3-5.  THE NET EFFECT WAS TO SHOW MORE PCPN SPREADING INTO
THE ERN STATES WITH THE FRONT THAN THE MRF....ESPECIALLY DAYS 5-7.  SOME
MORE LOCALLY HEAVY RAINS ARE POSSIBLE.

THERE WILL BE A BREAK BETWEEN SYS DAYS 4-5 IN THE PLAINS STATES.
EVENTUALLY...LOW LEVEL MOISTURE WILL RETURN DAY 6 AHEAD OF THE NEXT
UPPER SYS CROSSING THE INTERMOUNTAIN REGION.  LOOK FOR ANOTHER
CONVECTIVE OUTBREAK DAYS 6-7 (SUN-MON) IN THE CENTRAL/SRN PLAINS
STATES.

....WRN CONUS...

WE GENERALLY ACCEPT THE AVN/MRF ENSEMBLE MEAN OVER THIS PORTION OF
THE CONUS.  LACKING A CLOSED UPPER SYS...WE DRY OUT THE SHOWERY PCPN
THAT THE MRF HAD FORECAST DAYS 3-4 OVER THE E CENTRAL INTER-MOUNTAIN
REGION WITH THE CLOSING OFF UPPER LOW.  NEW AVN IS STILL IN GOOD
AGREEMENT WITH THE MRF IN SHOWING SIGNIFICANT PCPN FOR FAVORABLE
TERRAIN OF THE REGION FROM NRN CA NWD DAY 5....DECREASING INLAND.  AVN
SHOWS ANOTHER SLUG OF PCPN FOR THAT AREA LATER DAY 6.

...AK...

A STRONG SHORT WAVE WILL DROP SWD ACROSS THE ERN PORTION OF THE
STATE DAY 3 (THU)...ACCOMPANIED BY A FEW FLURRIES.  THERE IS GOOD
AGREEMENT AMONG MODELS ON COLD STRONG CYCLONIC VORTICITY
REACHING 55N/140W EARLY DAY 4.  THIS WOULD INCREASE THE CHANCE OF
SIGNIFICANT PCPN OVER OROGRAPHICALLY FAVORED PORTIONS OF SE ALASKA
DAYS 4-5.  THE UNSEASONABLE COLD OVER INTERIOR AK SHOULD BEGIN TO EASE
UP FROM W TO DAYS 5-7....ESPECIALLY OVER THE WRN PORTIONS OF THE STATE.
MILDER AIR FROM THE BERING SEA SHOULD BEGIN TO MAKE GRADUAL INROADS
INTO WRN ALASKA EARLY NEXT WEEK.  ONLY LIGHT SN FLURRIES EXPECTED IN
INTERIOR ALASKA THIS PERIOD....EXCEPT FOR MORE ORGANIZED BUT LIGHT SN
OVER WRN SECTIONS ACCOMPANYING THE BERING SEA INFLUENCE.

FLOOD/FORECAST OPERATIONS BRANCH GRAPHICS AVAILABLE ON THE WEB AT
http://www.hpc.ncep.noaa.gov
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4.4 Updates, Amendments, and Corrections. This product is not updated or amended. HPC will correct for format and grammatical errors as required.

5. Alaskan Discussion (product categories PMDAFC, PMDAFG, PMDAJK).

5.1 Mission Connection. NWS Weather Forecast Offices (WFO) in Anchorage, Juneau, and Fairbanks, Alaska, issue these discussions for possible inclusion into the Hydrometeorological Prediction Center's (HPC) Extended Forecast Discussion (see EPD, section 4). These products support the NWS public, aviation, and marine weather programs and the general meteorological community (private sector and the media).

5.2 Issuance Guidelines.

5.2.1 Creation Software. Alaska (AK) WFOs use AWIPS or commercial text editor software to create these products.

5.2.2 Issuance Criteria. These discussions are not scheduled or routine. Forecasters in Alaska issue these discussions when there are significant differences among the numerical models or known model biases in the Alaska and the North Pacific/Arctic Ocean areas.

5.2.3 Issuance Time. These products need to be issued no later than 4AM (Alaska Time) to allow for possible integration into the HPC Extended Forecast Discussion.

5.2.4 Valid Time. These products are valid from Day 3 to Day 7.

5.2.5 Product Expiration Time. These products expire with the next issuance.

5.3 Technical Description. Alaskan Discussions should follow the format and content described in this section.

5.3.1 MND Broadcast Line. Not applicable.

5.3.2 MND Header. The MND Header is "EXTENDED FCST DISC".

Alaskan Discussion Product Headers		
WFO	AWIPS ID	WMO Header
Anchorage	PMDAFC	FXAK28 PAFC
Fairbanks	PMDAFG	FXAK29 PAFG
Juneau	PMDAJK	FXAK27 PAJK

5.3.3 Content. These are narrative products which use standard NWS abbreviations to describe the meteorological reasoning for the location of significant weather features and precipitation in the Alaska/Eastern Russian/North Pacific/Arctic Ocean area. They provide a meteorological assessment of the available numerical weather prediction models relative to the region during the

Day 3-7 forecast period. Model references can include United States, Canadian, European, and Navy models.

5.3.4 Format. Example:

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FXAK28 PAFC 211800
PMDAFC

EXTENDED FCST DISC VALID SUN FEB 24 2002 THRU THU FEB 28 2002
NATIONAL WEATHER SERVICE ANCHORAGE AK
900 AM AST THU FEB 21 2002

...MODEL DISCUSSION FOR ALASKA...
THE NOGAPS APPEARS TO HAVE THE BEST HANDLE ON THE LOW LEVELS CONSIDERING THE
LAST 3 MODEL CYCLES. THE MRF AND THE UKMET CONTINUE TO HOLD THE LONG WAVE
RIDGE STATIONARY TOO LONG OVER EASTERN RUSSIA AT DAYS 3 THROUGH 5. THE
NOGAPS IS CONSISTENTLY HANDLING THE CYCLONE EXITING FROM JAPAN PRIOR TO DAY
3 BETTER THAN EITHER THE MRF OR THE UKMET AND SHOWS A RETROGRESSION OF THE
RUSSIAN RIDGE. THIS SOLUTION WILL DRIVE THE BERING ICE PACK EDGE FURTHER
NORTH IN CONTRAST TO THE MRF/UKMET SOLUTION WHICH IS TO DRIVE THE PACK
SOUTH.

Name/Initials/Fcstr ID
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5.4 Updates, Amendments, and Corrections. AK WFOs will correct for format and grammatical errors as required.

6. **Caribbean Discussion (product category PMDCA)**.

6.1 Mission Connection. HPC issues the Caribbean Discussion as guidance to Central American and Caribbean Basin users. It includes a 3-day forecast and model comparison.

6.2 Issuance Guidelines.

6.2.1 Creation Software. HPC uses commercial text editor software.

6.2.2 Issuance Criteria. This is a routine, schedule-driven product.

6.2.3 Issuance Time. 1830 UTC, non-holiday Monday-Friday only.

6.2.4 Valid Time. 0000 UTC Day 1 thru 0000 UTC Day 3.

6.2.5 Product Expiration Time. Product expires with next product issuance.

6.3 Technical Description. The Caribbean Discussion should follow the format and content described in this section.

6.3.1 MND Broadcast Line. Not applicable.

6.3.2 MND Header. Not applicable.

6.3.3 Content. This text bulletin gives a synopsis and forecast for Mexico, the Caribbean and South America north of the Equator for Days 1 - 3.

6.3.4 Format.

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FXCA20 KWBC 091822
PMDCA

NATIONAL CENTERS FOR ENVIRONMENTAL PREDICTION TROPICAL DESK
1822 UTC APRIL 09 2002

DISCUSSION VALID FROM 09/00 UTC:  CONSISTENT WITH THE PREVIOUS
FCST A 500/250 HPA BLOCKING RIDGE WILL REMAIN OVER THE WRN
CARIBBEAN-BAHAMAS/ERN USA THROUGH 24 HRS.  A POLAR TROUGH IS
RIDING/LIFTING OVER THIS RIDGE...IN THE PROCESS DISPLACING THE
RIDGE TO 75W BY 48 HRS.  AT 72 HRS THE RIDGE WILL RETROGRESS
TOWARDS 80W.

A WEAK FRONTAL BOUNDARY WILL BECOME QUASISTATIONARY AND LIE
ACROSS THE NRN GULF OF MEXICO TO SRN TAMAULIPAS AT 24 HRS...INTO
VERACRUZ AT 36-60 HRS...TO THEN DISSIPATE BY 72 HRS.  THIS FRONT
WILL SUPPORT LIGHT RAINFALL OVER TAMAULIPAS/VERACRUZ...WITH
ACCUMULATION OF 05-15MM/DAY.  A 500 HPA TROUGH WILL MOVE ACROSS
NRN MEXICO BY 36-48 HRS...TO INTERACT WITH THE TRAILING END OF
THE FRONT OVER VERACRUZ/TAMAULIPAS TO TRIGGER DEEP CONVECTION...
WITH RAINFALL ACCUMULATION OF 10-15MM/DAY WITH MAXIMA OF 40MM
ACROSS NRN VERACRUZ/NUEVO LEON.  THE MDLS ALSO FCST LOW LVL
WINDS TO TAKE A NORTHERLY COMPONENT ACROSS THE WRN GULF...TO
CONVERGE OVER SRN MEXICO THROUGH 36-48 HRS...WITH OROGRAPHICALLY
INDUCED RAINFALL TO PRODUCE ACCUMULATION OF 10-20MM/DAY WITH
ISLD MAXIMA OF 40-60MM OVER CHIAPAS/TABASCO.

AN 850 HPA HIGH N OF THE ISLANDS NEAR 35N 70W WILL SUPPORT A
BROAD RIDGE THROUGH 48 HRS...WITH THE RIDGE WEAKENING BY 72 HRS.
THE BROAD RIDGE SUPPORTS A TIGHT PRESSURE GRADIENT ACROSS THE
CARIBBEAN BASIN...WITH THE GRADIENT WANING AFTER 60 HRS.  THIS
RIDGE WILL RESULT IN AN ENE FLOW ACROSS THE LESSER ANTILLES/ERN
CARIBBEAN...AND MOSTLY E ACROSS THE CARIBBEAN BASIN...WITH WINDS
OF 25-30KT ACROSS THE REGION THROUGH 36-48 HRS.  THE BRISK
EASTERLIES WILL CONVERGE ON THE CARIBBEAN PLAINS OF COSTA RICA
AND NICARAGUA...TO SUPPORT RAINFALL ACCUMULATION OF 05-15MM/DAY
AND MAXIMA OF 25-35MM.  THE NE FLOW ACROSS THE WRN CARIBBEAN
WILL FAVOR A SOUTHWARD MIGRATION OF THE ITCZ/EQUATORIAL TROUGH
OVER COLOMBIA/ERN PACIFIC...WITH THE ITCZ NEARING THE EQUATOR BY
48-60 HRS.  NEVERTHELESS...THE MRF/AVN CONSISTENTLY FCST AN
ACTIVE WEATHER PATTERN ACROSS THE WRN HALF OF COLOMBIA...WITH
RAINFALL MAXIMA OF 75-100 MM CONCENTRATING NEAR MEDELLIN DUE TO
OROGRAPHIC FORCING TO PEAK AT 36-48 HRS.

A 500 HPA LONG WAVE TROUGH LIES E OF THE BLOCKING RIDGE...TO
EXTEND SSW FROM 35N 50W...ACROSS THE NRN LEEWARD ISLES TO NERN
VENEZUELA BY 24 HRS.  THE TROUGH AXIS WILL REMAIN NEARLY
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UNCHANGED THROUGH 48 HRS EXCEPT FOR A SLIGHT AMPLIFICATION
ACROSS VENEZUELA.  AT 72 HRS THE TROUGH AXIS WILL RETROGRESS TO
EXTEND ACROSS PUERTO RICO/MONA PASSAGE TO NRN COLOMBIA.  THE
TROUGH SUPPORTS A FRONT ACROSS THE NRN WINDWARD ISLES...INTO THE
SERN CARIBBEAN AT 24 HRS.  BY 36 HRS IT WILL MOVE OVER THE
WINDWARD ISLES...TO JUST N OF THE ABC ISLES.  AT 48 HRS IT WILL
PIVOT OVER THE WINDWARDS WHILE UNDULATING S TO THE NRN COAST OF
VENEZUELA.  IT THEN BECOMES STATIONARY WHILE WEAKENING THROUGH
72 HRS.  POST FRONTAL NORTHERLIES WILL SUPPORT LIGHT RAINFALL
ALONG THE NRN COAST OF HISPANIOLA/PUERTO RICO THROUGH 72 HRS.
FRONTAL CONVECTION ON THE FRENCH/WINDWARD ISLES WILL RESULT IN
RAINFALL ACCUMULATION OF 05-10 AND ISLD MAXIMA OF 25-35MM
THROUGH 48-54 HRS.  WINDS OVER THE ERN CARIBBEAN WILL CONTINUE
SHIFTING TO THE NE THROUGH 24 HRS...AND REMAIN FROM THE NE
THROUGH 72 HRS.  THE NORTHERLIES AND THE APPROACHING FRONT WILL
FAVOR CONVECTION ACROSS NRN VENEZUELA AND THE ABC ISLANDS
DURING THE FCST CYCLE...MOST INTENSE CONVECTION TO CONCENTRATE
OVER NWRN VENEZUELA ON AREAS W OF CARACAS...TO PRODUCE RAINFALL
ACCUMULATION OF 05-15MM/DAY...WITH WIDELY ISLD MAXIMA OF 40-60MM.

NO CHANGES ACROSS NRN S AMERICA AS A 250 HPA NARROW RIDGE IS TO
EXTEND W ACROSS THE TROPICAL ATLANTIC...GUIANAS-VENEZUELA-
COLOMBIA INTO THE ERN PACIFIC WITH MEAN RIDGE AXIS ALONG 05N.
THIS RIDGE IS ADVECTING ITCZ MOISTURE ACROSS PANAMA/COSTA RICA
INTO THE ERN CARIBBEAN...TO CONTINUE THROUGH 36-48 HRS.  THE
RIDGE WILL VENT EQUATORIAL TROUGH CONVECTION OVER THE SRN HALF
OF COLOMBIA/VENEZUELA...WHERE IT WILL RESULT IN RAINFALL
ACCUMULATION OF 15-35MM/DAY WITH ISLD MAXIMA OF 60-90MM.  OVER
THE GUIANAS...ITCZ RELATED CONVECTION WILL RESULT IN RAINFALL
ACCUMULATION OF 05-15MM/DAY WITH ISLD RAINFALL MAXIMA OF 35-55MM
OVER FRENCH GUIANA AFTER 24/30 HRS.

ARMSTRONG.....BDM (BAHAMAS)
RUDON.........NMS (BELIZE)
DAVISON.......NCEP (HPC)
```

6.4 Updates, Amendments, and Corrections. This product is not updated or amended. HPC will correct for format and grammatical errors as required.

7. **Hawaiian Discussion (product category PMDHI)**.

7.1 Mission Connection. The Hawaiian Discussion focuses on Days 1-7 model differences, and highlights the reasoning used by the HPC forecaster in terms of model preferences for particular weather situations.

7.2 Issuance Guidelines.

7.2.1 Creation Software. HPC uses commercial text editor software.

7.2.2 Issuance Criteria. This is a routine, schedule-driven product.

7.2.3 Issuance Time. 1300 UTC.

7.2.4 Valid Time. 0000 UTC Day 2 to 0000 UTC Day 7.

7.2.5 Product Expiration Time. Product expires after the next product issuance.

7.3 Technical Description. The Hawaiian Discussion should follow the format and content described in this section.

7.3.1 MND Broadcast Line. Not applicable.

7.3.2 MND Header. The MND header is, "HAWAII FCST DISC."

7.3.3 Content. This is a text product that describes the meteorological reasoning for the location of significant weather and precipitation features in the vicinity of the Hawaiian Islands for the 7 day period.

7.3.4 Format.

```
FXHW01 KWNH 101300
PMDHI

HAWAII FCST DISC VALID 00Z WED JAN 11 2002 THRU 00Z WED JAN 18 2002
HYDROMETEOROLOGICAL PREDICTION CENTER/NCEP/NWS
0800 AM EST THU JAN 10 2002

CONTD GOOD MODEL AGREEMENT AS A MID LEVEL TROF N OF THE ISLANDS LIFTS NEWD AND
MID LEVEL ENERGY NR THE ALEUTIANS DROPS SWWD REFORMING A SHARP MID LEVEL TROF
TO THE NW OF THE ISLANDS DAYS 1-2.  THIS BUILDS RIDGING NE-SW OF THE ISLANDS
CHAIN FROM 140W TO 170W WITH STRONG MID LEVEL SWRLY FLOW OUTER NWRN PORTION AS
TROF BASE DROPS AS FAR S AS 20N.  THESE FEATURES REMAIN FIXED FOR SEVERAL DAYS
ONLY DRIFTING EWD N OF THE ISLANDS BY DAY 7.  SFC FLOW WILL BECOME E AND SERLY
WHICH SHOULD CONT THRU DAY 6.  RETURN OF N-NE TRADES BY BOTH ECMWF AND MRF DAY
6-7 OVER W PORTIONS AS MID LEVEL TROF WEAKENS AND LIFTS NEWD AND SFC
REFLECTION DRIFTS EWD.  MRF ENSEMBLES AND ECMWF ENSEMBLES IN GOOD AGREEMENT
SFC AND ALOFT.

ROSENSTEIN/FORECAST OPERATIONS BRANCH
```

7.4 Updates, Amendments, and Corrections. No updates are issued for this product. HPC will correct for format and grammatical errors as required.

8. **South American Discussion (product category PMDSA)**.

8.1 Mission Connection. HPC International Desk issues the South American Discussion as guidance to regional users, the U.S. Department of Agriculture, and the Department of Defense. It includes a 5-day forecast and model comparison.

8.2 Issuance Guidelines.

8.2.1 Creation Software. HPC uses commercial text editor software.

8.2.2 Issuance Criteria. This is a routine, schedule-driven product.

8.2.3 Issuance Time. 1400 UTC, non-holiday Monday-Friday only.

8.2.4 Valid Time. 0000 UTC Day 1.

8.2.5 Product Expiration Time. Product expires with next product issuance.

8.3 Technical Description. The South American Discussion should follow the format and content described in this section.

8.3.1 MND Broadcast Line. Not applicable.

8.3.2 MND Header. Not applicable.

8.3.3 Content. This text bulletin gives a synopsis for South America south of the Equator.

8.3.4 Format.

```
FXSA20 KWBC 091400
PMDSA

SYNOPSIS:  THE 00 UTC 200 HPA ANALYSIS SHOWS THE BOLIVIAN HIGH
OVER THE CONTINENT NEAR 18S 69W.  THE HIGH EXTENDS A RIDGE TO THE
NORTHWEST ACROSS SOUTHERN PERU TO THE GALAPAGOS ISLANDS.  THE HIGH
ALSO RIDGES TO THE SOUTHEAST ACROSS PARAGUAY-SOUTHERN BRASIL INTO
THE ATLANTIC ALONG 40S 40W...TO 43S 50W.  THE RIDGE IS INDUCING A
TROUGH THAT EXTENDS ACROSS RIO DE JANEIRO/MINAS GERAIS TO
TOCANTINS/GOIAS BRASIL.  A NARROW RIDGE ENTERS NORTHERN BRASIL
ALONG 05S.  THERE IS ALSO A WELL DEFINED AREA OF UPPER DIFFLUENCE
ACROSS THE NORTHERN PORTIONS OF AMAZONIA.  THE SATELLITE IMAGERY
SHOWS ORGANIZED DEEP CONVECTION ALONG THE EQUATORIAL TROUGH
ACROSS NORTHERN BRASIL/AMAZONIA...WITH MOST INTENSE CONVECTION
AFFECTING NORTHWESTERN AMAZONIA...NORTHERN JUNGLE OF PERU AND
ACROSS ECUADOR.

THE SOUTHERN BRANCH OF THE POLAR JET HAS ITS ENTRANCE AT 250 HPA
NEAR 55S 103W...THEN ALONG 63S 77W...58S 51W...55S 35W...56S 18W...AND
56S 09W.  THE NORTHERN BRANCH HAS ITS ENTRANCE AT 40S 123W...THEN
ALONG 44S 114W AND 51S 99W...EXITING AT 54S 87W.  IT REFORMS AT 46S
82W...THEN ALONG 39S 87W...EXITING AT 30S 89W.  IT REFORMS AT 27S
87W...ALONG 34S 75W...40S 65W...48S 52W...A 137KT MAXIMA AT 50S 38W...
49S 34W...50S 14W...AND 47S 02W.  THE SUBTROPICAL JET HAS ITS
ENTRANCE AT 21S 89W...ALONG 26S 77W...EXITING AT 34S 57W.  IT
REFORMS AT 20S 34W...ALONG 23S 25W...EXITING AT 24S 14W.

A 500 HPA LONG WAVE RIDGE EXTENDS FROM A HIGH AT 25S 109W...ALONG
30S 105W...40S 100W...49S 90W...55S 80W...62S 70W...TO 68S 53W.  SOUTH
OF THIS RIDGE...THE ANALYSIS SHOWS A SOUTHERN STREAM SHORT WAVE
TROUGH THAT EXTENDS FROM 72S 79W...ALONG 65S 90W...TO 60S 103W.
FARTHER EAST...A LOW IS CENTERED AT 65S 30W.  THERE IS A SHORT WAVE
TROUGH THAT EXTENDS BETWEEN 62S 40W AND 57S 43W.  NORTH OF THIS
SYSTEM...A SHORT WAVE TROUGH EXTENDS FROM THE MALVINAS...ALONG 49S
```

```
61W...CENTRAL PATAGONIA TO PUERTO MONTT CHILE.  THIS TROUGH
SEPARATED FROM A NORTHERN STREAM AXIS THAT EXTENDS FROM 42S
78W...ALONG 33S 83W AND 28S 88W...TO 24S 92W.  A 500 HPA HIGH OVER
SOUTHERN BOLIVIA...REFLECTION OF THE 200 HPA ANTICYCLONE...EXTENDS
A RIDGE ACROSS EL CHACO ARGENTINO...RIO GRANDE DO SUL BRASIL...TO
37S 42W.  A NORTHERN STREAM LOW AT 35S 27W EXTENDS A SHORT WAVE
TROUGH ALONG 28S 33W...26S 40W...TO SAO PAULO BRASIL.

THE SURFACE ANALYSIS SHOWS A BROAD RIDGE ON THE PACIFIC ANCHORED
ON A 1029 HPA HIGH AT 37S 94W.  THE HIGH RIDGES SOUTHEAST ACROSS
SOUTHERN CHILE/PATAGONIA TO A 1021 HPA HIGH NORTH OF THE
MALVINAS.  A PROGRESSIVE FRONT IS SLIDING UNDER THIS RIDGE AND
APPROACHING THE ANTARCTIC PENINSULA.  A MATURED/OCCLUDED 962 HPA
LOW IS CENTERED AT 63S 36W.  THERE IS A 962 HPA LOW AT 61S 21W...
SUPPORTING AN OCCLUDED FRONT ALONG 58S 27W...62S 24W...59S 17W...A
TRIPLE POINT AT 55S 14W...49S 16W...46S 25W...45S 33W...42S 47W...A
1015 HPA LOW AT 40S 52W...ACROSS RIO GRANDE SO SUL TO CORRIENTES
ARGENTINA.  A SQUALL LINE AHEAD OF THIS FRONT IS DISSIPATING AS IT
MOVES THROUGH RIO GRANDE DO SUL/SOUTHEASTERN PARAGUAY. ALSO OVER
THE WESTERN ATLANTIC...A 1025 HPA HIGH AT 35S 36W...SUPPORTS A
RIDGE OFF THE COAST OF BRASIL.  A 1014 HPA LOW/WAVE AT 33S 21W
SUPPORTS A WEAK FRONT OVER ESPIRITO SANTO/MINAS GERAIS.

LATORRE.................DMC (CHILE)
ROJAS...................AASANA (BOLIVIA)
DAVISON.................NCEP (HPC)
```

8.4 Updates, Amendments, and Corrections. This product is not updated or amended. HPC will correct for format and grammatical errors as required.

9. **Surface Fronts & Pressure Analysis (product categories 90F,90I)**.

9.1 Mission Connection. HPC issues the Surface Fronts and Pressure Analysis as guidance to Conus and Alaskan NWS field offices and the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public and aviation weather programs.

9.2 Issuance Guidelines.

9.2.1 Creation Software. HPC uses the National Centers N-AWIPS software to generate these products.

9.2.2 Issuance Criteria. These are routine, schedule-driven products.

9.2.3 Issuance Time. Refer to Table 1.

9.2.4 Valid Time. Refer to Table 1.

HPC Surface Fronts and Pressure Analysis Product Schedule				
Valid Time (UTC)	***Issuance Time (UTC)***	***AWIPS ID***	***WMO Header***	***Product Description***
0000	0125	RBG90F RBG90I	PYAA98 KWNO PYAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
0300	0430	RBG90F RBG90I	PYAA98 KWNO PYAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
0600	0730	RBG90F RBG90I	PYAA98 KWNO PYAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
0900	1030	RBG90F RBG90I	PYAA98 KWNO PYAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
1200	1330	RBG90F RBG90I	PYAA98 KWNO PYAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
1500	1730	RBG90F RBG90I	PYAA98 KWNO PYAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
1800	1930	RBG90F RBG90I	PYAA98 KWNO PYAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
2100	2230	RBG90F RBG90I	PYAA98 KWNO PYAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)

Table 1. Surface Fronts and Pressure Chart Issuance and Valid Times.

9.2.5 Product Expiration Time. Not applicable.

9.3 Technical Description. Charts should follow the format and content described in this section.

9.3.1 MND Broadcast Line. Not applicable.

9.3.2 MND Header. Not applicable.

9.3.3 Content. This product depicts the analysis of synoptic and sub-synoptic/mesoscale surface features including highs, lows, fronts, troughs, outflow boundaries, squall lines, and drylines. The analysis domain covers most of North America, the Western Atlantic and Eastern Pacific oceans, and the Gulf of Mexico.

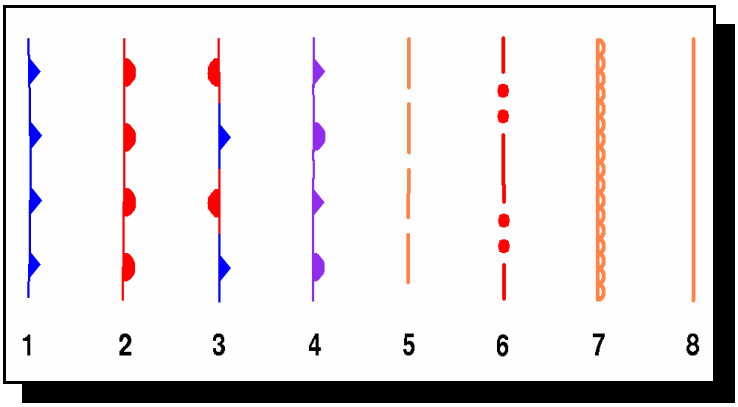

Figure 1. Color Codes for Features.

Key to Features

1 - Cold Front; 2 - Warm Front; 3 - Stationary Front
4 - Occluded Front; 5 -- Trough ("TROF") Also used to Depict Outflow Boundary ("OUTFLOW BNDRY");
6 -- Squall Line; 7 -- Dry Line; 8 -- Tropical Wave ("TRPCL WAVE")

Each surface front and squall line (1, 2, 3, 4, 6 above) is accompanied by a 3-digit label (green) that has a bracket either before or after it. Using the example "[ABC", here is how to translate the label:

A: Type of Front
0 = stationary
2 = warm
4 = cold
6 = occluded
7 = squall line

B: Strength of Front
0 = none (applies only to squall line)
1 = weak, weakening
2 = weak
3 = weak, strengthening
4 = moderate, weakening
5 = moderate
6 = moderate, strengthening
7 = strong, weakening
8 = strong
9 = strong, strengthening

C: Other Characteristics
0 = none
5 = forming
6 = quasi-stationary
7 = with waves
8 = diffuse

9.3.4 Format.

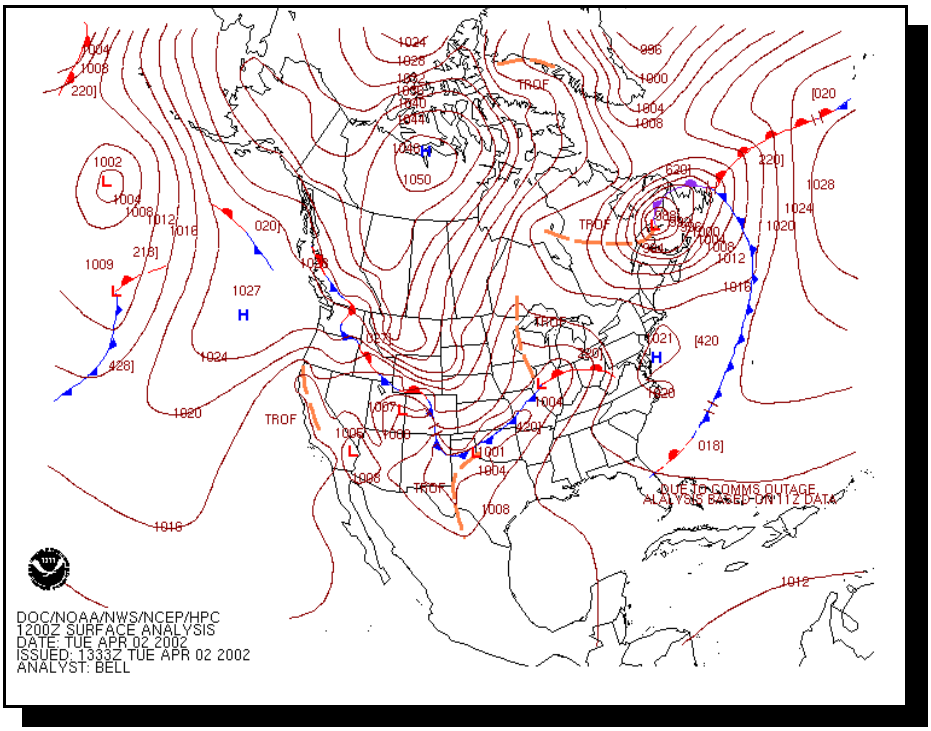

Figure 2. Surface Fronts & Pressure Analysis.

9.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

10. **Coded Surface Frontal Positions (product category CODSUS)**.

10.1 Mission Connection. HPC issues the coded Surface Frontal positions to NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public and aviation weather programs.

10.2 Issuance Guidelines.

10.2.1 Creation Software. HPC uses the National Centers N-AWIPS software to generate these products.

10.2.2 Issuance Criteria. These are routine, schedule-driven products.

10.2.3 Issuance Time. Refer to Table 2.

10.2.4 Valid Time. Refer to Table 2.

HPC Coded Surface Frontal Position Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0130	0000	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
0430	0300	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
0730	0600	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1030	0900	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1330	1200	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1630	1500	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1930	1800	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
2230	2100	CODSUS	ASUS01 KWBC	Coded description of frontal analysis

Table 2. Coded Surface Frontal Position Product Schedule.

10.2.5 Product Expiration Time. Not applicable.

10.3 Technical Description. Charts should follow the format and content described in this section.

10.3.1 MND Broadcast Line. Not applicable.

10.3.2 MND Header. Not applicable.

10.3.3 Content. These are text bulletins that give the latitude and longitude positions (to the nearest degree) of vertices along the analyzed frontal positions or significant weather features along with the positions of high and low pressure centers.

10.3.4 Format.

Note: Valid time is decoded MMDDHH. Example below is July 15th, 18 UTC.

```
ASUS01 KWBC 151930
CODSUS
VALID 071518Z

HIGHS 1017 3291 1024 50104 1023 28128 1026 5969 1034 3966 1025 64136 1024
69124 1035 69178
LOWS 1004 4091 993 44153 1009 63110 1007 70106 1006 78154 1011 52115 998 6038
1014 46110 1015 3650 1016 5276 1010 35114 1008 2994 1006 3298
TROF 3489 3390 3190 3091 3091 2992 2994
WARM WK 4091 4090 4088 4087 4086 4084 4182 4181 4079 3978
3878
TROF 4091 4290 4389 4387
STNRY WK 4091 3992 3893 3894 3796 3697 3698 36100 36101
STNRY WK 4662 4763 4764 4766 4767 4769 4671 4673 4675 4777
4780 4781 4683 4683 4684 4585 4586 4488 4489 4490
4491 4492 4394 4395 4496 4497 4398 4399 42100 42102
43104 44105 45106 45107 46109 46111 48113 50114 51114 52115
52116 53118 54120 55123 57129 58132 59136 60140 60143 60146
60148 59149
OCFNT WK 44153 44154 45153 45151 45147 44144 43141 42138 41136 40135
39134 38133
WARM WK 38133 34132 32132 30132 28132
COLD WK 38133 35133 32135 30137 28141 26146 25150 24152
STNRY WK 51131 52135 51141 51144 50147 49151 48158
COLD WK 78154 77150 74149 73149 70151 67158
COLD WK 63110 62113 61115 61118 61121 62125 64129
COLD WK 70107 71101 7094 6991 6789 6588 6288 5991 5798 54101
OCFNT WK 5940 6040 6139 6136
WARM WK 6136 6233 6229 6123 5819
COLD WK 6136 6135 6133 5932 5831 5731 5532 5334 5036 4739 4640
STNRY WK 4640 4541 4243 4045 3848
COLD WK 3848 3847 3746 3546 3347 3148 2851 2752 2553
OCFNT WK 3651 3750 3849 3848
TROF 42123 41122 39121 38119 37117 36115 35113
TROF 2994 2795 2597
TROF 3297 3199 31101 32103 34105
TROF 5276 5072 4970 4967 4965 4963
TROF 5276 5077 4881 4883
TROF 6346 6648 7050 7354 7658 7865
TROF 73146 70139 67136 66135
COLD WK 61163 60167 59171 59175 60179 60176
TROF 44109 42107 40106 38105 36105
TROF 44109 42107 40106 38105 36105
TROF 44109 42107 40106 38105 36105

CODE
```

44109 = 44 N Lat 109 W Long

HIGHS = High Pressure Centers
LOWS = Low Pressure Centers
COLD = Cold Front
WK = Weak
WARM = Warm Front
STNRY = Stationary Front

TROF = Weak Surface Boundary
OCFNT = Occluded Front

10.4 Updates, Amendments, and Corrections. This product is not updated or amended. Corrections are issued as necessary.

11. South American Discussion (product category PMDSA).

11.1 Mission Connection. HPC International Desk issues an overview discussion of numerical model guidance for South America to regional users.

11.2 Issuance Guidelines.

11.2.1 Creation Software. HPC uses commercial text editor software.

11.2.2 Issuance Criteria. This is a routine, schedule-driven product.

11.2.3 Issuance Time. 1630 UTC, non-holiday Monday-Friday only.

11.2.4 Valid Time. 0000 UTC Day 1 thru 0000 UTC Day 5.

11.2.5 Product Expiration Time. Product expires with next product issuance.

11.3 Technical Description. The South American Discussion should follow the format and content described in this section.

11.3.1 MND Broadcast Line. Not applicable.

11.3.2 MND Header. Not applicable.

11.3.3 Content. This text bulletin provides an overview of the models analyzed for South America south of the Equator for Days 1 - 5.

11.3.4 Format.

```
FXSA20 KWBC 091630
PMDSA
1630 UTC APRIL 09 2002

DISCUSSION: AS EXPECTED ON THE PREVIOUS RUN...THE GLOBAL MODELS
MADE PATTERN ADJUSTMENTS TO THE FORECAST AFTER 72 HRS.  THE NCEP
ENSEMBLE MODELS...HOWEVER...STILL SHOW A HIGH DEGREE OF VARIABILITY
AT THE POINT OF INITIALIZATION AND THROUGHOUT THE CYCLE.

ADJUSTMENTS WERE ALSO MADE AT 200 HPA ON THE NORTHERN HALF OF THE
CONTINENT...AS THE MODELS RESOLVE A MORE PERSISTENT BOLIVIAN HIGH
IN THIS CYCLE.  AT 24 HRS THEY NOW FORECAST THE HIGH TO RELOCATE
TO EL CHACO PARAGUAYO NEAR 21S 59W BY 24 HRS...TO MOVE TO MATO
GROSSO DO SUL BRASIL BY 48 HRS...AND TO MINAS GERAIS NEAR 22S 45W
BY 72 HRS.  AT 96 HRS THE HIGH MOVES OFF THE COAST OF RIO DE
JANEIRO INTO THE WESTERN ATLANTIC...WHERE IT IS TO COLLAPSE BY 120
HRS.  SIMULTANEOUSLY ANOTHER HIGH WILL CLOSE NEAR 10S 60W BY 96
HRS...WHERE IT WILL BUILD A BROAD RIDGE.  THE MODELS KEEP MOST OF
THE ORGANIZED CONVECTION OVER THE CONTINENT ON AREAS BETWEEN 03N-
06S...WITH THE EQUATORIAL TROUGH AT LOW LEVELS SUPPLYING THE
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BOUNDARY LAYER CONVERGENCE. MOST INTENSE CONVECTION IS TO REMAIN OVER NORTHWESTERN AMAZONIA-NORTHERN PERU AND ECUADOR THROUGH AT LEAST 48 HRS...TO FLARE-UP ONCE AGAIN BY 120 HRS. ON THE SIERRA OF PERU AND BOLIVIA EXPECT GENERALLY LIGHT...LOCALLY MODERATE... CONVECTION WITH ACCUMULATION OF 05-15MM/DAY. COASTAL CONVECTION OVER ESPIRITO SANTO BRASIL THROUGH 36/48 HRS...AND ACROSS BAHIA AT 24-72 HRS...WITH RAINFALL ACCUMULATION OF 05-10MM/DAY IN THESE AREAS.

A 500 HPA TROUGH OVER THE SOUTHERN PORTIONS OF THE CONTINENT IS TO GRADUALLY SPLIT THROUGH 24 HRS. A LOW WILL CLOSE OFF THE COAST OF PATAGONIA NEAR 48S 58W AND ANOTHER OFF THE CENTRAL COAST OF CHILE NEAR 37S 77W. THE SOUTHERNMOST LOW WILL MOVE TO 49S 40W BY 48 HRS...WHERE IT WILL BE QUICKLY ABSORBED BY A SOUTHERN STREAM TROUGH. THE NORTHERNMOST LOW...OFF THE COAST OF CHILE...WILL GRADUALLY SHEAR EASTWARD ACROSS THE CENTRAL ANDES...WITH THE LOW FILLING TO AN OPEN TROUGH AS IT MOVES TO MENDOZA ARGENTINA BY 54-60 HRS. THIS SYSTEM WILL TRIGGER ISOLATED DEEP CONVECTION ON THE CENTRAL ANDES OF CHILE BETWEEN 30S-36S AT 36-42 HRS. AS IT CROSSES THE CENTRAL ANDES OF CHILE...THIS SYSTEM WILL ALSO SUPPORT LIGHT TO MODERATE SNOWFALL ON ELEVATIONS ABOVE 3KM. AT 72 HRS THE TROUGH WILL MOVE OFF THE COAST OF URUGUAY/BUENOS AIRES PROVINCE. THIS SYSTEM WILL INDUCE HEIGHT FALLS OF 75-125GPM AS IT MOVES THROUGH CENTRAL CHILE INTO ARGENTINA.

AT LOW LEVELS...AN ELONGATED FRONT WILL UNDULATE ACROSS RIO GRANDE DO SUL-CORDOBA ARGENTINA TO MENDOZA ARGENTINA BY 24 HRS. THE MID LEVEL LOW OFF THE COAST OF CHILE WILL FAVORABLY INTERACT WITH THE TAIL END OF THIS FRONT TO INDUCE SURFACE CYCLOGENESIS OVER MENDOZA BY 36 HRS. BY 48 HRS THE LOW WILL MOVE EAST-SOUTHEAST TO THE BUENOS AIRES PROVINCE/RIO DE LA PLATA...SUPPORTING A FRONT ACROSS CENTRAL ARGENTINA. A SQUALL LINE (LINEA DE INESTABILIDAD) WILL PRECEDE THE SURFACE FRONT AS IT MOVES THROUGH CENTRAL ARGENTINA...WITH AT THREAT OF SEVERE WEATHER OVER THIS AREA AT 36-60 HRS. EXPECT RAINFALL ACCUMULATION OF 15-35MM/DAY WITH MAXIMA OF 50-75MM THROUGH 60HRS...WITH RAINFALL ACCUMULATION TO QUICKLY DECREASE THEREAFTER.

ON THE SOUTHERN STREAM...A 500 HPA SHORT WAVE TROUGH WILL MOVE ACROSS THE ANTARCTIC PENINSULA-TIERRA DEL FUEGO BY 24 HRS. BY 48 HRS THE TROUGH WILL MOVE ACROSS THE FALKLAND ISLANDS. AT 72 HRS IT WILL DEEPEN TO A CLOSED LOW NEAR 57S 40W AS A LONG WAVE RIDGE BUILDS OVER THE EASTERN PACIFIC ALONG 90W. THE TROUGH WILL SUPPORT A FRONT OVER TIERRA DEL FUEGO AT 24 HRS...THAT ADVANCES TO NORTHERN PATAGONIA-PUERTO MONTT CHILE BY 48 HRS...WHERE IT WILL SUPPORT RAINFALL ACCUMULATION OF 05-15MM. BY 72 HRS THE FRONT WILL BECOME DIFFUSE/ILL ORGANIZED AS IT MOVES TOWARDS THE BUENOS AIRES PROVINCE.

A NORTHERN STREAM 500 HPA SHORT WAVE TROUGH WILL NEAR SOUTHERN CHILE BY 48 HRS. THE MRF ADJUSTED ITS FORECAST IN FAVOR OF THE EUROPEAN MODELS...PLACING THE LOW JUST WEST OF TEMUCO/PUERTO MONTT BY 72 HRS. THE LOW WILL THEN REMAIN BETWEEN CONCEPCION/SANTIAGO

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CHILE AT 84-120 HRS.  THE NCEP ENSEMBLE MODELS STILL SHOW A LOT OF
DISCREPANCIES AND POOR CORRELATION IN THIS AREA...THUS EXPECT
MODELS TO MAKE ADDITIONAL CHANGES AS THE WEEK PROGRESSES.  THIS
SYSTEM IS NOW FORECAST TO REFLECT QUITE WELL AT LOW LEVELS...WITH
A CLOSED LOW AND A FRONT NEAR ARCHIPIELAGO DE LOS CHONOS AT 48
HRS.  THE LOW WILL DEEPEN THROUGH 72 HRS...THEN REMAIN OFFSHORE
THROUGH 96-108 HRS.  OVER ARCHIPIELAGO DE LOS CHONOS IT WILL
SUPPORT RAINFALL ACCUMULATION OF 05-15MM/DAY AT 36-60 HRS...WHILE
OVER PUERTO MONTT/TEMUCO EXPECT RAINFALL MAXIMA OF 35MM AT 60-84
HRS.

LATORRE.................DMC (CHILE)
ROJAS...................AASANA (BOLIVIA)
DAVISON.................NCEP (HPC)
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11.4 Updates, Amendments, and Corrections. No updates or amendments are issued for this product. HPC will correct for format and grammatical errors as required.

12. **Daily Hazardous Weather Chart (no product ID or Header)**.

12.1 Mission Connection. HPC compiles a hazardous weather chart that highlights the critical weather expected over the next 24 hours. The chart is based on HPC's 12- and 24-hour fronts and instantaneous precipitation charts (92F, 94F) and (L2P, L4P) flash flood (94E) and heavy snow/ice (93S, 94S) guidance chart, the Storm Prediction Center's Day 1 and Day 2 convective outlooks, and would denote the official Tropical Prediction Center's tropical storm track if within the domain of the graphic. This product supports the NWS public weather programs.

12.2 Issuance Guidelines.

12.2.1 Creation Software. HPC uses the National Centers N-AWIPS software to generate these products.

12.2.2 Issuance Criteria. These are routine, schedule-driven products.

12.2.3 Issuance Time. Issued daily no later than 1000 UTC.

12.2.4 Valid Time. 1200 UTC Day 1 to 1200 UTC Day 2.

12.2.5 Product Expiration Time. Product expires with the next issuance.

12.3 Technical Description. Charts should follow the format and content described in this section.

12.3.1 MND Broadcast Line. Not applicable.

12.3.2 MND Header. Not applicable.

12.3.3 Content. These are graphical products that depict the instantaneous positions of frontal features (warm, cold, occluded, trough lines, etc.) and high and low pressure centers at the valid time of the product. In addition significant weather hazards such as flash flooding, severe thunderstorms, heavy snow, etc., are highlighted.

Key to Features

1 -- Cold Front; 2 -- Warm Front; 3 -- Stationary Front
4 -- Occluded Front; 5 – Trough ("TROF") also used to depict Outflow Boundary ("OUTFLOW BNDRY")
6 -- Squall Line; 7 -- Dry Line
8 -- Tropical Wave ("TRPCL WAVE")

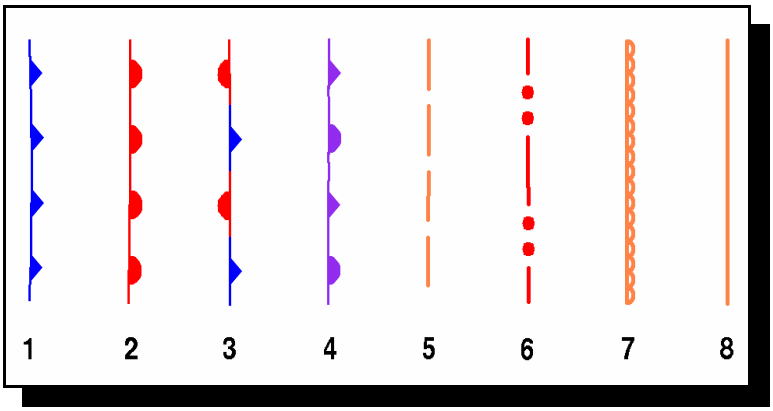

Figure 3. Color Codes for Features.

12.3.4 Format. Product will follow the format as indicated in Figure 4, below.

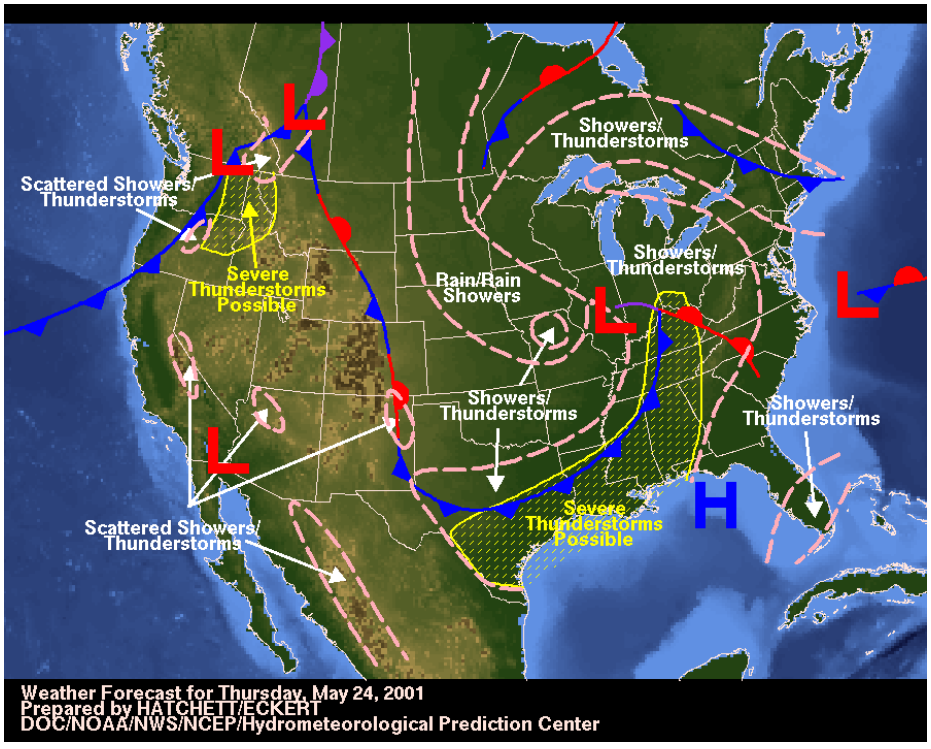

Figure 4. Forecast fronts/pressure centers and significant weather.

12.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

13. **Surface Fronts & Pressure Charts (12-48 hrs) (product categories 92F, 94F, 96F, 98F)**.

13.1 Mission Connection. HPC issues the surface fronts and pressure charts as guidance to CONUS NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. These products describe the location and strength of major meteorological features over the next 48 hours. The products support the NWS public and aviation weather programs.

13.2 Issuance Guidelines.

13.2.1 Creation Software. HPC uses the National Centers N-AWIPS software to generate these products.

13.2.2 Issuance Criteria. These are routine, schedule-driven products.

13.2.3 Issuance Time. Refer to Table 3.

13.2.4 Valid Time. Refer to Table 3.

HPC Short-range Instantaneous Precipitation Graphical Guidance Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0430	1200 day 1 0000 day 2	RBG92F RBG94F	PPIC01 KWBC PPIE01 KWBC	12-hour fronts and pressures 24-hour fronts and pressures
0730	1200 day 2 0000 day 3	RBG96F RBG98F	PPIG01 KWBC PPII01 KWBC	36-hour fronts and pressures 48-hour fronts and pressures
0900	1800 day 1 0600 day 2	RBG92F RBG98F	PPIC01 KWBC PPIE01 KWBC	18-hour fronts and pressures 30-hour fronts and pressures
1630	0000 day 1 1200 day 1	RBG92F RBG94F	PPIC01 KWBC PPIE01 KWBC	12-hour fronts and pressures 24-hour fronts and pressures
1930	0000 day 2 1200 day 2	RBG96F RBG98F	PPIG01 KWBC PPII01KWBC	36-hour fronts and pressures 48-hour fronts and pressures
2100	1800 day 1 0600 day 2	RBG92F RBG98F	PPIC01 KWBC PPIE01 KWBC	18-hour fronts and pressures 30-hour fronts and pressures

Table 3. Surface Fronts and Pressure Chart Issuance and Valid Times.

13.2.5 Product Expiration Time. Not applicable.

13.3 Technical Description. Charts should follow the format and content described in this section.

13.3.1 MND Broadcast Line. Not applicable.

13.3.2 MND Header. Not applicable.

13.3.3 Content. These are graphical products that depict the instantaneous positions of frontal features (warm, cold, occluded, trough lines) and high and low pressure centers at the valid time of the product.

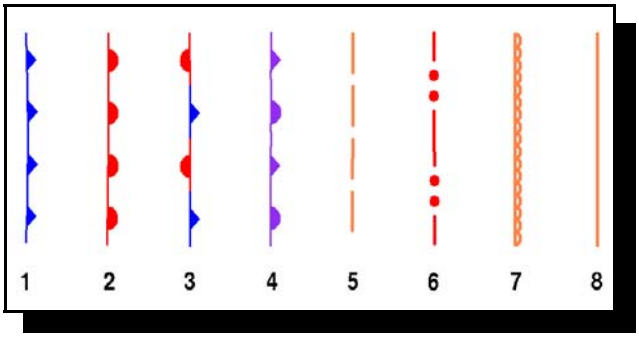

Figure 5. Color Codes for Features

Key to Features

1 -- Cold Front; 2 -- Warm Front; 3 -- Stationary Front
4 -- Occluded Front; 5 – Trough ("TROF") also used to depict Outflow Boundary ("OUTFLOW BNDRY")
6 -- Squall Line; 7 -- Dry Line; 8 -- Tropical Wave ("TRPCL WAVE")

13.3.4 Format. Product will follow the format as indicated in Figure 6.

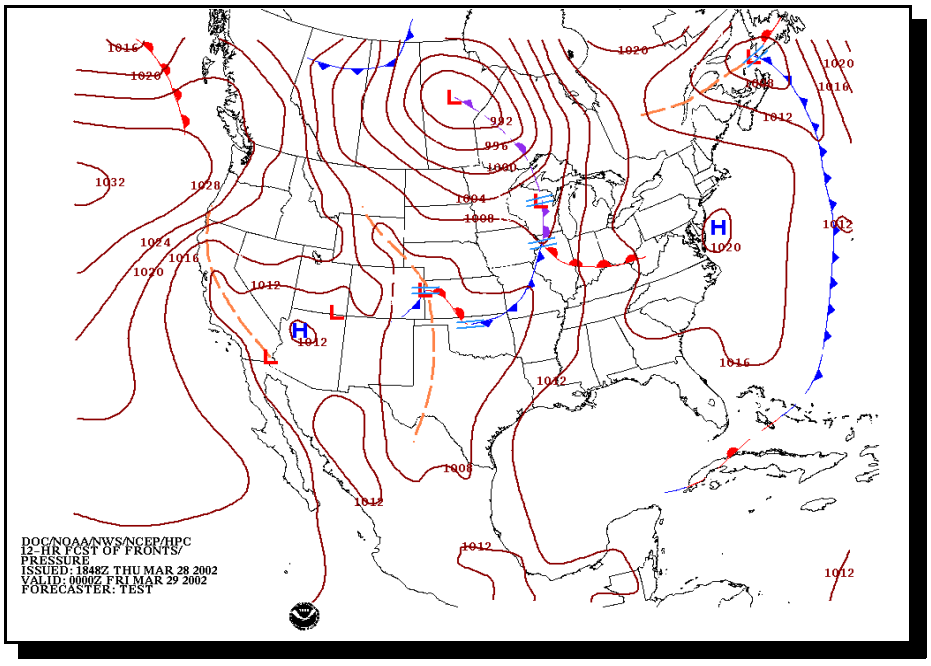

Figure 6. Forecast Fronts/Pressure Centers.

13.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are made as necessary.

14. Surface Instantaneous Precipitation Charts (12-48 hrs) (product categories L2P, L4P, L6P, L8P).

14.1 Mission Connection. HPC issues the instantaneous precipitation forecast charts as guidance to NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. These products describe the instantaneous location and coverage of precipitation and precipitation type every 12 hours through 48 hours. The products support the NWS public and aviation weather programs.

14.2 Issuance Guidelines.

14.2.1 Creation Software. HPC uses the National Centers N-AWIPS software to generate these products.

14.2.2 Issuance Criteria. These are routine, schedule-driven products.

14.2.3 Issuance Time. Refer to Table 4.

14.2.4 Valid Time. Refer to Table 4.

HPC Short-range Instantaneous Precipitation Graphical Guidance Product Schedule

Issuance Time (UTC)	*Valid Time (UTC)*	*AWIPS ID*	*(WMO Header)*	*Product Description*
0430	1200 day 1 0000 day 2	RBGL2P RBGL4P	PEIC61 KWBC PEIE62 KWBC	12-hour instantaneous precipitation 24-hour instantaneous precipitation
0730	1200 day 2 0000 day 3	RBGL6P RBGL8P	PEIG63 KWBC PEII64 KWBC	36-hour instantaneous precipitation 48-hour instantaneous precipitation
0900	1800 day 1 0600 day 2	RBGL2P RBGL4P	PEIC61 KWBC PEIE62 KWBC	18-hour instantaneous precipitation 30-hour instantaneous precipitation
1630	0000 day 1 1200 day 1	RBGL2P RBGL4P	PEIC61 KWBC PEIE62 KWBC	12-hour instantaneous precipitation 24-hour instantaneous precipitation
1930	0000 day 2 1200 day 2	RBGL6P RBGL8P	PEIG63 KWBC PEII64 KWBC	36-hour instantaneous precipitation 48-hour instantaneous precipitation
2100	1800 day 1 0600 day 2	RBGL2P RBGL4P	PEIC61 KWBC PEIE62 KWBC	18-hour instantaneous precipitation 30-hour instantaneous precipitation

Table 4. Instantaneous Precipitation Chart Issuance and Valid Times.

14.2.5 Product Expiration Time. Not applicable.

14.3 Technical Description. Charts should follow the format and content described in this section.

14.3.1 MND Broadcast Line. Not applicable.

14.3.2 MND Header. Not applicable.

14.3.3 Content. A graphical product that depicts the instantaneous position of precipitation, both type and coverage, at the valid time of the product.

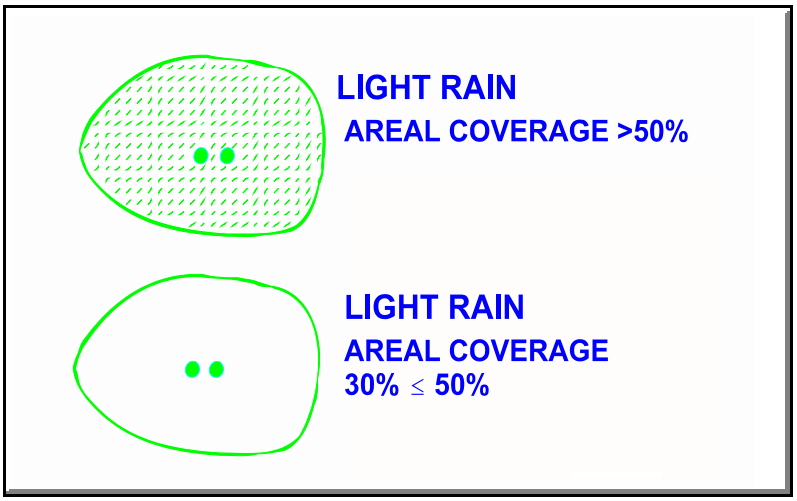

Figure 7. Areal Precipitation Depiction.

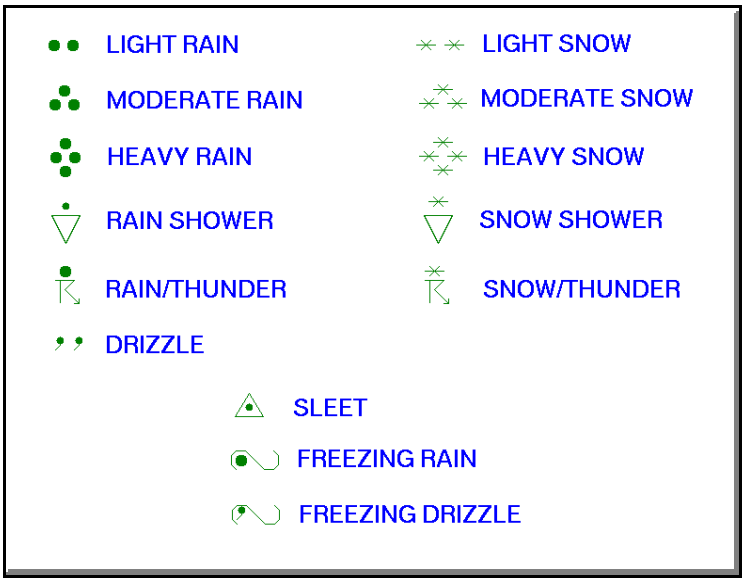

Figure 8. Precipitation Symbols and Intensity.

14.3.4 Format.

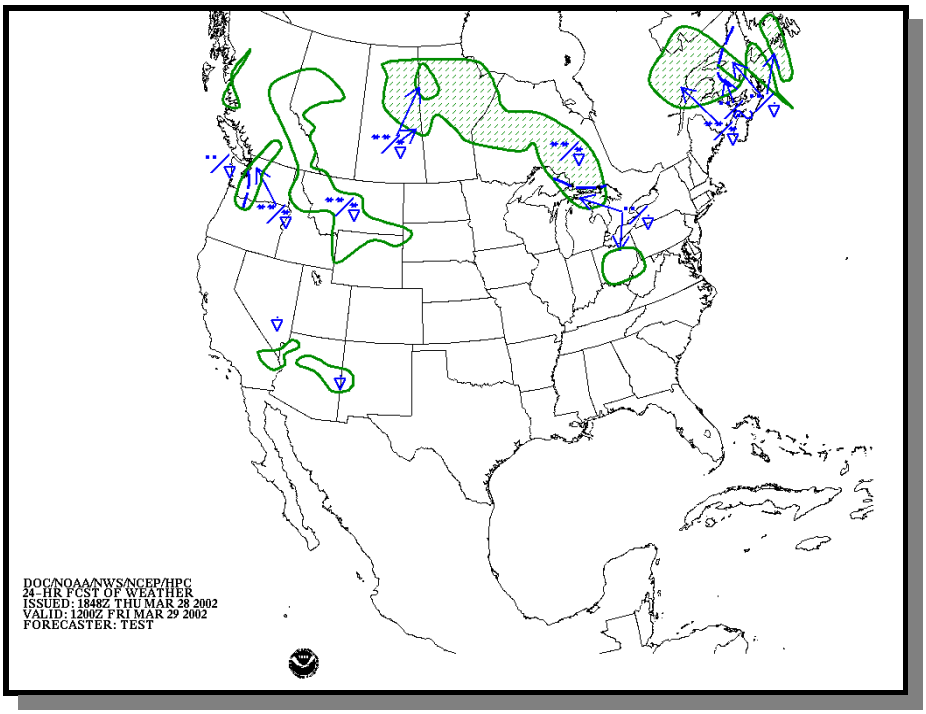

Figure 9. Forecast of Instantaneous Precipitation and Type.

14.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

15. **Coded Surface Frontal Positions Forecast (product category CODSRP)**.

15.1 Mission Connection. HPC issues the coded Surface Frontal Position Forecasts to NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public and aviation weather programs.

15.2 Issuance Guidelines.

15.2.1 Creation Software. HPC uses the National Centers N-AWIPS software to generate these products.

15.2.2 Issuance Criteria. These are routine, schedule-driven products.

15.2.3 Issuance Time. Refer to Table 5.

15.2.4 Valid Time. Refer to Table 5.

HPC Coded Surface Frontal Position Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0430	1200 Day 1 0000 Day 2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
0630	1200 day 2 0000 Day 3	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
0800	1800 Day 1 0600 Day2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
1630	0000 Day 1 1200 Day 2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
1830	0000 Day 2 1200 Day 3	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
2000	1800 Day 1 0600 Day 2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast

Table 5. Coded Surface Frontal Position Product Schedule.

15.2.5 Product Expiration Time. Not applicable.

15.3 Technical Description. Message should follow the format and content described in this section.

15.3.1 MND Broadcast Line. Not applicable.

15.3.2 MND Header. Not applicable.

15.3.3 Content. These are text bulletins that describe the latitudes and longitudes (to the nearest degree) of vertices along the forecast frontal positions, along with the positions of highs and lows and pressures. These correspond directly with the 92F, 94F, 96F, 98F products described in section 12. These text messages allow the private sector and the media to plot the location of these weather systems.

15.3.4 Format.

```
FSUS02 KWBC 080630
CODSRP

36HR PROG VALID 101200Z
HIGHS 1032 4284 1033 5395 1018 39107
LOWS 1011 42103 1012 37115 1015 39110
OCFNT WK 5461 5260 5061
WARM WK 5061 4959 4858 4657 4456
COLD WK 5061 4763 4466 4170 3776 3482 3286 3192
STNRY WK 3192 3094 2998 29101 30104 31106
STNRY WK 45107 46108 47109 50113 54118 55121 55124 54129
```

```
COLD WK 4495 4498 44101 45105 45105 45106 45107
WARM WK 4494 4491 4389 4287
TROF 5083 4886 4690 4594
TROF 55132 52132 50133 48136
TROF 40115 38115 35115 32115 32114
TROF 45108 43104 42102 38103 36105
COLD WK 5879 5482 5185 4989 4993
COLD WK 5879 5482 5185 4989 4993
COLD WK 5879 5482 5185 4989 4993

48HR PROG VALID 110000Z
HIGHS 1034 5184 1032 4679 1027 3370
LOWS 1010 4596 1005 39102 1008 36116 1010 32107 1010 38110 1008 23103
STNRY WK 3676 3579 3285 3193 3197
COLD WK 5055 4660 4265 3870 3773 3676
TROF 42100 40101 38102 35106
WARM WK 4597 4593 4489
COLD WK 4596 4398 42102 44106 46108 47109
WARM WK 58123 55116 53112 52112 49110 47109
TROF 39118 38118 36116 36116 33115 30113
TROF 50117 49118 46120
WARM WK 45147 46141 46135 44133
COLD WK 5771 5474 5077 4981
TROF 31107 29107 26106 24104 22103 19103
TROF 31107 29107 26106 24104 22103 19103
TROF 31107 29107 26106 24104 22103 19103
TROF 31107 29107 26106 24104 22103 19103

CODE

44109 = 44 N Lat 109 W Long

HIGHS = High Pressure Centers
LOWS = Low Pressure Centers
COLD = Cold Front
WK = Weak
WARM = Warm Front
STNRY = Stationary Front
TROF = Weak Surface Boundary
OCFNT = Occluded Front
```

15.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

16. **Ultraviolet Index (UVI) Forecast (product category UVICAC)**.

16.1 Mission Connection. The Climate Prediction Center (CPC) issues a UV Index (UVI) Forecast for 58 United States' cities daily. CPC generates the UVI Forecast to help people understand the effects on their skin of their exposure to the sun's ultraviolet radiation. This product is used by the media and supports public weather programs.

16.2 Issuance Guidelines.

16.2.1 Creation Software. CPC uses commercial text editor software.

16.2.2 Issuance Criteria. This is a routine, schedule-driven product.

16.2.3 Issuance Time. The UVI product is issued daily at approximately 1800 UTC.

16.2.4 Valid Time. The product is valid for solar noon (approximately 12 noon local standard time or 1pm local daylight time), Day 2.

16.2.5 Product Expiration Time. Product expires after valid time.

16.3 Technical Description. The UVI product should follow the format and content described below.

16.3.1 MND Broadcast Line. Not applicable.

16.3.2 MND Header. The UVI MND header is, "NOAA/EPA ULTRAVIOLET INDEX /UVI/FORECAST."

16.3.3 Content. Both text-based and web-based product specify the forecast UVI for solar noon, Day 2.

16.3.4 Format.

```
AEUS41 KWBC 011800
UVICAC

NOAA/EPA ULTRAVIOLET INDEX /UVI/ FORECAST
CLIMATE PREDICTION CENTER NCEP
NATIONAL WEATHER SERVICE WASHINGTON DC
157 PM EDT TUE MAY 1 2001

VALID MAY 2 2001 AT SOLAR NOON /APPROXIMATELY NOON
LOCAL STANDARD TIME OR 100 PM LOCAL DAYLIGHT TIME/

THE UV INDEX IS CATEGORIZED BY EPA AS FOLLOWS

          UVI             EXPOSURE LEVEL
          0 1 2              MINIMAL
          3 4                LOW
          5 6                MODERATE
          7 8 9              HIGH
          10 AND GREATER     VERY HIGH

FOR HEALTH RELATED ISSUES...CONTACT EPA AT 1-800-296-1996 OR
CDC 1-800-311-3435.  FOR TECHNICAL INFORMATION ON HOW UVI
VALUES ARE GENERATED...CONTACT THE NATIONAL WEATHER SERVICE AT
301-713-0622.

CITY               STATE  UVI       CITY               STATE  UVI
ALBUQUERQUE          NM     8       LITTLE ROCK          AR     7
ANCHORAGE            AK     1       LOS ANGELES          CA     7
ATLANTIC CITY        NJ     6       LOUISVILLE           KY     6
```

```
ATLANTA              GA     7       MEMPHIS              TN     7
BALTIMORE            MD     6       MIAMI                FL     6
etc...
```

Cities Used in UVICAC (UVI Forecast):

ALBUQUERQUE	DETROIT	NORFOLK
ANCHORAGE	DOVER	OKLAHOMA CITY
ATLANTIC CITY	HARTFORD	OMAHA
ATLANTA	HONOLULU	PHILADELPHIA
BALTIMORE	HOUSTON	PHOENIX
BILLINGS	INDIANAPOLIS	PITTSBURGH
BISMARCK	JACKSON MS	PORTLAND ME
BOISE	JACKSONVILLE	PORTLAND OR
BOSTON	LAS VEGAS	PROVIDENCE
BUFFALO	LITTLE ROCK	RALEIGH
BURLINGTON VT	LOS ANGELES	SALT LAKE CITY
CHARLESTON WV	LOUISVILLE	SAN FRANCISCO
CHARLESTON SC	MEMPHIS	SAN JUAN
CHEYENNE	MIAMI	SEATTLE
CHICAGO	MILWAUKEE	SIOUX FALLS
CLEVELAND	MINNEAPOLIS	ST. LOUIS
CONCORD	MOBILE	TAMPA
DALLAS	NEW ORLEANS	WASHINGTON DC
DENVER	NEW YORK	WICHITA
DES MOINES		

CPC also generates a graphical product depicting the same information and posts it on the web. Example:

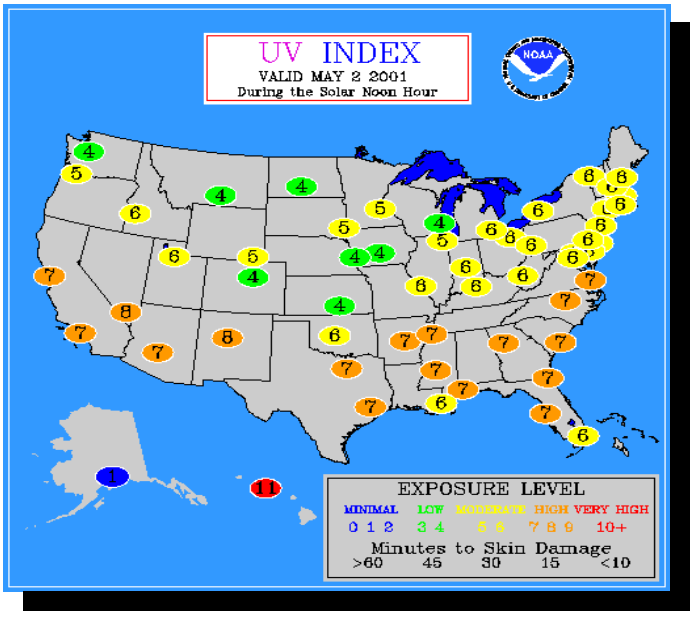

Figure 10. Ultraviolet Index Map.

16.4 Updates, Amendments, and Corrections. No updates or amendments are issued for this product. CPC will correct for format and grammatical errors as required.

17. **Selected Cities Forecast (product categories SCS [11-14])**.

17.1 Mission Connection. HPC issues the Selected Cities Forecast that provides the observed maximum and minimum temperatures, observed precipitation, and forecast weather and temperatures for 162 cities in the United States, Puerto Rico and the U.S. Virgin Islands. This product is used by print media and supports public weather programs.

17.2 Issuance Guidelines.

17.2.1 Creation Software. HPC uses commercial text editor software.

17.2.2 Issuance Criteria. This is a routine, schedule-driven product.

17.2.3 Issuance Time. 0100 and 1300 UTC.

17.2.4 Valid Time. 1200 UTC Day 1 to 1200 UTC Day 2.

17.2.5 Product Expiration Time. Product expires with the next issuance.

17.3 Technical Description. The Selected Cities Forecast should follow the format and content described in this section.

17.3.1 MND Broadcast Line. Not applicable.

17.3.2 MND Header. The SCS header is, "SELECTED CITIES WEATHER SUMMARY AND FORECASTS."

17.3.3 Content. This is a tabular text product consisting of the previous day's maximum and minimum temperatures and observed liquid precipitation along with forecast weather and temperatures for the next two days for 162 cities in the United States, Puerto Rico and the U.S. Virgin Islands. The abbreviated forecasts are derived from the Coded Cities Forecasts (CCFs) issued by WFOs. The last part (SCS14, FPUS23 KWNH) has a final section that gives the highest and lowest temperatures observed in the conterminous United States. These extremes are usually for stations with elevations below 8,500 feet. Normally stations will represent towns or cities of over 1,000 population. Some exceptions to these guidelines may be made due to noteworthiness of the location (e.g., Death Valley, California, or West Yellowstone, Montana). If a city is missing it is noted as MISG in the weather category and MM/MM for the max and min temperature.

17.3.4 Format.

Example...Morning Issuance:

```
FPUS20 KWNH 051227
SCS11
SELECTED CITIES WEATHER SUMMARY AND FORECASTS...PART 1 OF 4
NATIONAL WEATHER SERVICE - WASHINGTON D.C.
HYDROMETEOROLOGICAL PREDICTION CENTER...NWS...CAMP SPRINGS MD
737 AM EST TUE MAR 05 2002

TEMPERATURES INDICATE DAYTIME HIGH..NIGHTTIME LOW
B INDICATES TEMPERATURES BELOW ZERO
```

PRECIPITATION FOR 24 HOURS ENDING AT 7 AM EST

CITY	MON...MAR 04 HI/LO	PCPN	FORECAST TUE....MAR 05 WEA	HI/LO	FORECAST WED....MAR 06 WEA	HI/LO
ABILENE TX	61 38		SUNNY	63/45	SUNNY	73/50
AKRON CANTON	14 10	.01	MOCLDY	53/34	SHWRS	46/32
ALBANY NY	31 15		PTCLDY	28/21	PTCLDY	45/33
ALBUQUERQUE	53 22		SUNNY	65/30	FAIR	67/32
ALLENTOWN	34 12		SUNNY	32/24	PTCLDY	55/37
AMARILLO	58 23		SUNNY	70/35	PTCLDY	73/35
ANCHORAGE	29 09		FAIR	29/05	FAIR	30/06
ASHEVILLE	29 16		SUNNY	50/25	SUNNY	60/33
ATLANTA	35 23		PTCLDY	53/31	PTCLDY	64/38
ATLANTIC CITY	38 14		SUNNY	40/31	SUNNY	55/41
AUSTIN	58 17		WINDY	65/46	WINDY	68/55
BALTIMORE	34 16		SUNNY	41/26	SUNNY	59/36
BATON ROUGE	48 24		SUNNY	61/39	SUNNY	68/50

etc.

Key to Weather Terminology:

PTCLDY = Partly Cloudy
MOCLDY = Mostly Cloudy
VRYHOT = Very Hot
VRYCLD = Very Cold
SNOSHW = Snow Showers
DRZL = Drizzle
FLRRYS = Snow Flurries
RNSNOW = Rain and Snow
BLZZRD = Blizzard
BLGSNO = Blowing Snow
TSTRMS = Thunderstorms
SHWRS = Rain Showers
FZRAIN = Freezing Rain
FZDRZL = Freezing Drizzle

Cities Used in Selected Cities Products:

Cities for SCS11

ABILENE TX
AKRON CANTON
ALBANY NY
ALBUQUERQUE
ALLENTOWN
AMARILLO
ANCHORAGE
ASHEVILLE
ATLANTA
ATLANTIC CITY
AUSTIN
BALTIMORE
BATON ROUGE
BILLINGS
BIRMINGHAM
BISMARCK
BOISE
BOSTON
BRIDGEPORT
BROWNSVILLE
BUFFALO
BURLINGTON VT
CARIBOU
CASPER
CHARLESTON SC
CHARLESTON WV
CHARLOTTE
CHATTANOOGA
CHEYENNE
CHICAGO
CINCINNATI
CLEVELAND
COLORADO SPGS
COLUMBIA SC
COLUMBUS GA
COLUMBUS OH

Cities for SCS12

CONCORD NH
CORPUS CHRISTI
DALLAS FT WORTH
DAYTON
DAYTONA BEACH
DENVER
DES MOINES
DETROIT
DULUTH
EL PASO
ELKINS
ERIE
EUGENE
EVANSVILLE
FAIRBANKS
FARGO
FLAGSTAFF
FLINT
FORT SMITH
FORT WAYNE
FRESNO
GOODLAND
GRAND JUNCTION
GRAND RAPIDS
GREAT FALLS
GREEN BAY
GREENSBORO
HARRISBURG
HARTFORD SPGFLD
HELENA
HONOLULU
HOUSTON INTCNTL
HUNTSVILLE AL
INDIANAPOLIS
JACKSON MS
JACKSONVILLE
JUNEAU
KANSAS CITY
KEY WEST
KNOXVILLE
LAKE CHARLES
LANSING
LAS VEGAS
LEXINGTON

Cities for SCS13

LINCOLN
LITTLE ROCK
LOS ANGELES
LOUISVILLE
LUBBOCK
MACON
MADISON
MEDFORD
MEMPHIS
MIAMI BEACH
MIDLAND ODESSA
MILWAUKEE
MPLS ST PAUL
MOBILE
MONTGOMERY
NASHVILLE
NEW ORLEANS
NEW YORK CITY
NEWARK
NORFOLK VA
NORTH PLATTE
OKLAHOMA CITY
OMAHA
ORLANDO
PADUCAH
PENDLETON
PEORIA
PHILADELPHIA
PHOENIX
PITTSBURGH
POCATELLO
PORTLAND ME
PORTLAND OR
PROVIDENCE
PUEBLO
RALEIGH DURHAM
RAPID CITY
RENO
RICHMOND
ROANOKE
ROCHESTER NY
ROCKFORD
SACRAMENTO
ST LOUIS
ST THOMAS VI

Cities for SCS14

SALEM OR
SALT LAKE CITY
SAN ANGELO
SAN ANTONIO
SAN DIEGO
SAN FRANCISCO
SAN JOSE
SAN JUAN PR
SANTA FE
ST STE MARIE
SAVANNAH
SEATTLE
SHREVEPORT
SIOUX CITY
SIOUX FALLS
SOUTH BEND
SPOKANE
SPRINGFIELD IL
SPRINGFIELD MO
SYRACUSE
TALLAHASSEE
TAMPA ST PTRSBG
TOLEDO
TOPEKA
TUCSON
TULSA
TUPELO
WACO
WASHINGTON DC
W PALM BEACH
WICHITA
WICHITA FALLS
WILKES BARRE
WILMINGTON DE
YAKIMA
YOUNGSTOWN OH
YUMA

17.4 Updates, Amendments, and Corrections. These products are not updated or amended. HPC will correct for format and grammatical errors as required.

18. **Travelers Forecast (product categories TAV [10, 12, 13])**.

18.1 Mission Connection. HPC issues the Travelers Forecast that provides the forecast weather and temperatures for several dozen cities in the United States and Puerto Rico. This product is used by the media and supports public weather programs.

18.2 Issuance Guidelines.

18.2.1 Creation Software. HPC uses commercial text editor software.

18.2.2 Issuance Criteria. This is a routine, schedule-driven product.

18.2.3 Issuance Time. 1100 and 2300 UTC.

18.2.4 Valid Time. 1200 UTC Day 1 to 1200 UTC Day 2.

18.2.5 Product Expiration Time. Product expires with the next issuance.

18.3 Technical Description. The Travelers Forecast should follow the format and content described in this section.

18.3.1 MND Broadcast Line. Not applicable.

18.3.2 MND Header. The TAV MND header is, "TRAVELERS FORECAST TABLE."

18.3.3 Content. This is a tabular text product consisting of the forecast weather and temperatures for the next two days for 51 cities in the United States and Puerto Rico.

18.3.4 Format.

Example - Morning Issuance

```
FPUS10 KWNH 081035
TAV10
TRAVELERS FORECAST TABLE
NATIONAL WEATHER SERVICE - WASHINGTON D. C.
HYDROMETEOROLOGICAL PREDICTION CENTER...NWS...CAMP SPRINGS MD
TEMPERATURES INDICATE DAYTIME HIGH..NIGHTTIME LOW
B INDICATES TEMPERATURES BELOW ZERO
                FORECAST        FORECAST
                WED....MAY 08   THU....MAY 09
CITY            WEA     HI/LO   WEA     HI/LO
ALBANY NY       PTCLDY  64/44   SHWRS   58/52
ANCHORAGE       RAIN    50/38   PTCLDY  49/38
ATLANTA         PTCLDY  86/68   PTCLDY  88/65
BILLINGS        SNOSHW  40/28   PTCLDY  53/32
BOISE           PTCLDY  56/34   CLOUDY  61/38
BOSTON          FAIR    61/40   MOCLDY  59/54
CHICAGO         TSTRMS  71/53   PTCLDY  62/40
COLUMBUS OH     TSTRMS  75/64   TSTRMS  76/46
DALLAS FT WORTH MOCLDY  89/67   PTCLDY  78/58
DENVER          MOCLDY  60/33   PTCLDY  60/39
DETROIT         TSTRMS  63/63   TSTRMS  71/43
HONOLULU        PTCLDY  81/71   PTCLDY  83/72
KANSAS CITY     TSTRMS  79/47   PTCLDY  66/43
```

LAS VEGAS	SUNNY	82/58	SUNNY	86/61
LOS ANGELES	MOCLDY	68/55	PTCLDY	72/55
LOUISVILLE	SHWRS	81/68	TSTRMS	73/46
MEMPHIS	PTCLDY	88/70	TSTRMS	78/60
MIAMI BEACH	SUNNY	88/77	SUNNY	88/77
MPLS ST PAUL	SHWRS	52/42	MOCLDY	50/30
NEW ORLEANS	PTCLDY	90/75	PTCLDY	90/73
OKLAHOMA CITY	PTCLDY	91/56	PTCLDY	70/48
PHOENIX	SUNNY	92/65	SUNNY	94/67

etc.

Key to Weather Terminology:

PTCLDY = Partly Cloudy
MOCLDY = Mostly Cloudy
VRYHOT = Very Hot
VRYCLD = Very Cold
SNOSHW = Snow Showers
DRZL = Drizzle
FLRRYS = Snow Flurries
RNSNOW = Rain and Snow
BLZZRD = Blizzard
BLGSNO = Blowing Snow
TSTRMS = Thunderstorms
SHWRS = Rain Showers
FZRAIN = Freezing Rain
FZDRZL = Freezing Drizzle

Cities Used in Travelers Forecast Tables:

Cities for TAV10

ALBANY NY
ANCHORAGE
ATLANTA
BILLINGS
BOISE
BOSTON
CHICAGO
COLUMBUS OH
DALLAS FT WORTH
DENVER
DETROIT
HONOLULU
KANSAS CITY
LAS VEGAS
LOS ANGELES
LOUISVILLE
MEMPHIS
MIAMI BEACH
MPLS ST PAUL
NEW ORLEANS
OKLAHOMA CITY
PHOENIX
RALEIGH DURHAM
RAPID CITY
SAN ANTONIO
SAN FRANCISCO
SEATTLE
TAMPA ST PTRSBG
WASHINGTON DC

Cities for TAV12

ALBANY NY
ANCHORAGE
ATLANTA
ATLANTIC CITY
BOSTON
BUFFALO
BURLINGTON VT
CHARLESTON WV
CHARLOTTE
CHICAGO
CLEVELAND
DALLAS FT WORTH
DENVER
DETROIT
GREAT FALLS
HARTFORD SPGFLD
HONOLULU
HOUSTON INTCNTL
KANSAS CITY
LAS VEGAS
LOS ANGELES
MIAMI BEACH
MPLS ST PAUL
NEW ORLEANS
NEW YORK CITY
NORFOLK VA
OKLAHOMA CITY
ORLANDO
PHILADELPHIA
PHOENIX
PITTSBURGH
PORTLAND ME
PORTLAND OR
RENO

Cities for TAV13

SALT LAKE CITY
SAN DIEGO
SAN FRANCISCO
SAN JUAN PR
SEATTLE
SPOKANE
SYRACUSE
TAMPA ST PTRSBG
WASHINGTON DC

18.4 Updates, Amendments, and Corrections. These products will not be updated or amended. HPC will correct for format and grammatical errors as required.

19. **Canadian Urban Forecasts (product category CSCNMC)**.

19.1 Mission Connection. The product is generated by the Meteorological Service of Canada (MSC) and disseminated internationally to United States' public interests.

19.2 Issuance Guidelines.

19.2.1 Creation Software. The NWS Telecommunications Gateway receives this product and retransmits it to domestic users.

19.2.2 Issuance Criteria. This is a routine, schedule-driven product.

19.2.3 Issuance Time. This product is issued daily at approximately 0730 UTC and1930 UTC.

19.2.4 Valid Time. Through Day 2.

19.2.5 Product Expiration Time. Product expires with the next issuance.

19.3 Technical Description. The product follows the format and content described in this section.

19.3.1 MND Broadcast Line. Not applicable.

19.3.2 MND Header. The MND header for this product is "CANADIAN URBAN FORECASTS."

19.3.3 Content. This product contains tabular arrays of short forecasts and predicted high and low temperatures (in degrees Celsius) for numerous Canadian cities.

19.3.4 Format.

Example:

```
FPCN12 CWAO 040800
CANADIAN URBAN FORECASTS
TEMPERATURE IN DEGREES CELSIUS
CITY           FORECAST                  FORECAST
               FRIDAY                    SATURDAY
               WEA            HI         WEA                LO/HI
IQALUIT        WINDY          M06        INCRG CLOUDINESS   M12/00
```

```
YELLOWKNIFE     MAINLY SUNNY   8          VARIABLE CLOUD     M02/8
WHITEHORSE      MAINLY CLOUDY  8          PARTLY CLOUDY      M03/7
etc.
```

Cities for CSCNMC

CALGARY	OTTAWA	THUNDER BAY
CHARLOTTETOWN	QUEBEC	TORONTO
EDMONTON	REGINA	VANCOUVER
FREDERICTON	SAINT JOHN NB	VICTORIA
HALIFAX	SASKATOON	WINDSOR
IQALUIT	ST JOHNS NFLD	WINNIPEG
KAMLOOPS	SUDBURY	WHITEHORSE
MONTREAL	SYDNEY	YELLOWKNIFE

19.4 Updates, Amendments, and Corrections. Not applicable.

20. **Days 3 - 7 Surface Progs (product categories 9JH-9NH)**.

20.1 Mission Connection. HPC issues the Days 3 through 7 Surface Progs as guidance to NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. These products describe the location of surface fronts and pressures for the Days 3 through 7. The products support the NWS public and aviation weather programs.

20.2 Issuance Guidelines.

20.2.1 Creation Software. HPC uses the National Centers N-AWIPS software to generate these products.

20.2.2 Issuance Criteria. These are routine, schedule-driven products.

20.2.3 Issuance Time. Refer to Table 6.

20.2.4 Valid Time. Refer to Table 6.

HPC Day 3 - 7 Surface Prog Product Schedule

Issuance Time (UTC)	*Valid Time (UTC)*	*AWIPS ID*	*(WMO Header)*	*Product Description*
1815	1200 Day 3	RBG9JH	PPHK01 KWBC	Medium Range Day 3 Surface Fcst
1815	1200 Day 4	RBG9KH	PPHK01 KWBC	Medium Range Day 4 Surface Fcst
1815	1200 Day 5	RBG9LH	PPHK01 KWBC	Medium Range Day 5 Surface Fcst
1815	1200 Day 6	RBG9MH	PPHK01 KWBC	Medium Range Day 6 Surface Fcst
1815	1200 Day 7	RBG9NH	PPHK01 KWBC	Medium Range Day 7 Surface Fcst

Table 6. Day 3 - 7 Surface Prog Product Schedule.

20.2.5 Product Expiration Time. Not applicable.

20.3 Technical Description. Charts should follow the format and content described in this section.

20.3.1 MND Broadcast Line. Not applicable.

20.3.2 MND Header. Not applicable.

20.3.3 Content. These are graphical products that depict the locations of surface fronts and pressures over North America, the central North Pacific and eastern North Atlantic for Days 3-7.

20.3.4 Format.

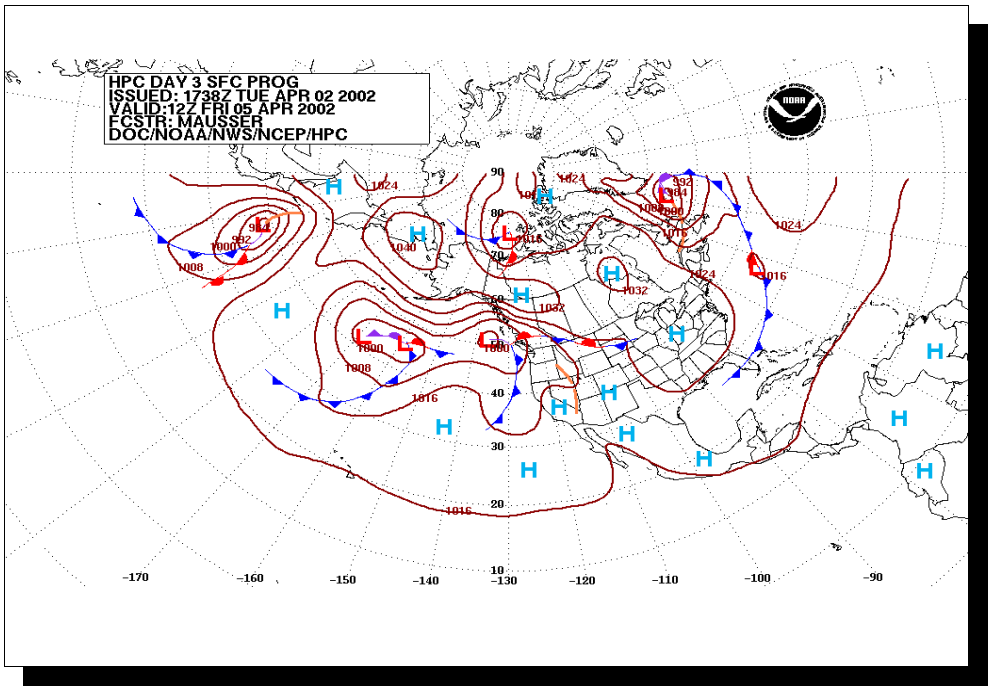

Figure 11. Day 3 Surface Prog.

20.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

21. **Days 3 - 7 Temp./Precipitation Forecast Anomalies (product categories 93P-97P)**.

21.1 Mission Connection. HPC issues the Days 3 - 7 Temperature/Precipitation Forecast Anomalies charts as guidance to CONUS NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public weather programs.

21.2 Issuance Guidelines.

21.2.1 Creation Software. HPC uses the National Centers N-AWIPS software to generate these products.

21.2.2 Issuance Criteria. These are routine, schedule-driven products.

21.2.3 Issuance Time. Refer to Table 7.

21.2.4 Valid Time. Refer to Table 7.

HPC Day 3-7 Temperature/Precipitation Forecast Anomalies Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
1330	1200 Day 1	RBG93P	PYWK43 KWBC	Day 3 Temp./Precipitation Anomalies Forecast
1330	1200 Day 1	RBG94P	PYWM44 KWBC	Day 4 Temp./Precipitation Anomalies Forecast
1330	1200 Day 1	RBG95P	PYWO45 KWBC	Day 5 Temp./Precipitation Anomalies Forecast
1330	1200 Day 1	RBG96P	PYQ46 KWBC	Day 6 Temp./Precipitation Anomalies Forecast
1330	1200 Day 1	RBG97P	PYWS98 KWBC	Day 7 Temp./Precipitation Anomalies Forecast

Table 7. Days 3 - 7 Temperature/Precipitation Anomalies Forecast Product Schedule.

21.2.5 Product Expiration Time. Not applicable.

21.3 Technical Description. Charts should follow the format and content described in this section.

21.3.1 MND Broadcast Line. Not applicable.

21.3.2 MND Header. Not applicable.

21.3.3 Content. These are graphical products that depict the Days 3 - 7 temperature and precipitation forecasts and deviation from climatology for 93 stations over the CONUS.

21.3.4 Format.

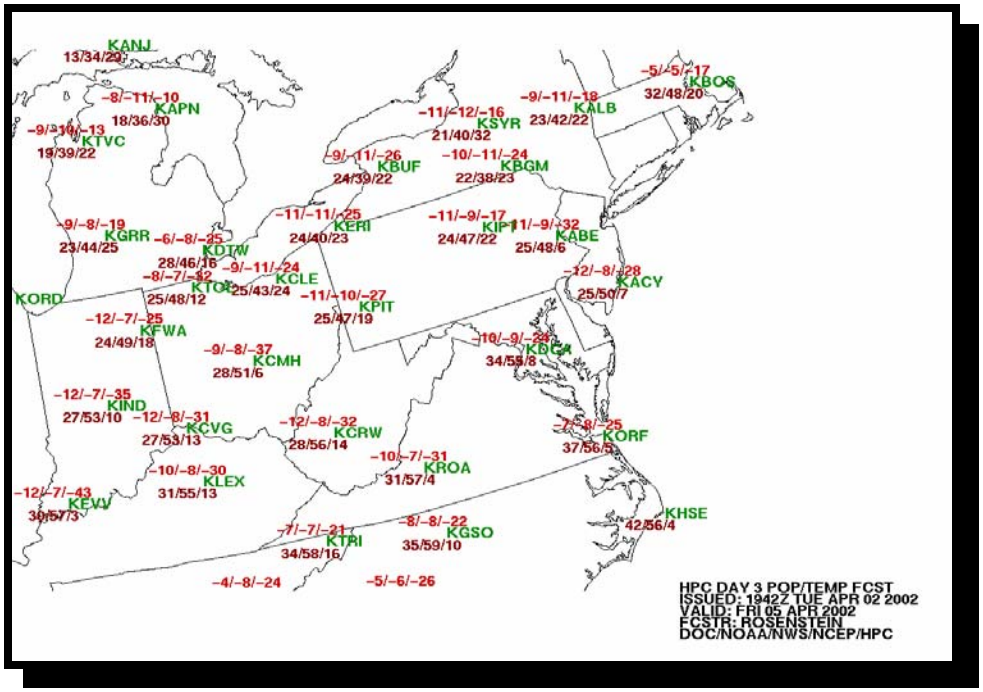

Figure 12. Sample Day 3 NE Region POP/TEMP Anomalies & Fcst.

KEY

AMIN/AMAX/APOP
Station ID
Tmin/Tmax/POP

AMIN - Min Temp Anomaly
AMAX - Max Temp Anomaly
APOP - POP Anomaly
Tmin - Fcst Min Temperature
Tmax - Fcst Max Temperature

21.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

22. **5-Day Mean Max/Min Temperature Anomalies (product categories 95A, 95B)**.

22.1 Mission Connection. HPC issues the 5-day mean Maximum and Minimum Temperature anomaly charts as guidance to CONUS NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. These products describe the maximum and minimum temperature anomalies from climatology over the next five days. The products support the NWS public and aviation weather programs.

22.2 Issuance Guidelines.

22.2.1 Creation Software. HPC uses the National Centers N-AWIPS software to generate these products.

22.2.2 Issuance Criteria. These are routine, schedule-driven products.

22.2.3 Issuance Time. Refer to Table 8.

22.2.4 Valid Time. Refer to Table 8.

HPC Mean 5-Day Max/Min Temperature Anomalies Product Schedule

Issuance Time (UTC)	*Valid Time (UTC)*	*AWIPS ID*	*(WMO Header)*	*Product Description*
1330	1200 Day 1-1200 Day 5	RBG95A	PTIO52 KWBC	5 - day mean Maximum Temp anomaly (MOS)
1330	1200 Day 1-1200 Day 5	RBG95B	PTIO53 KWBC	5 - day mean Minimum Temp anomaly (MOS)

Table 8. Mean 5 Day Max/Min Temperature Anomaly Product Schedule.

22.2.5 Product Expiration Time. Not applicable.

22.3 Technical Description. Charts should follow the format and content described in this section.

22.3.1 MND Broadcast Line. Not applicable.

22.3.2 MND Header. Not applicable.

22.3.3 Content. These are graphical products that depict the mean AVN MOS maximum and minimum temperature anomalies in degrees Fahrenheit from climatology.

22.3.4 Format. See Figures 13 and 14.

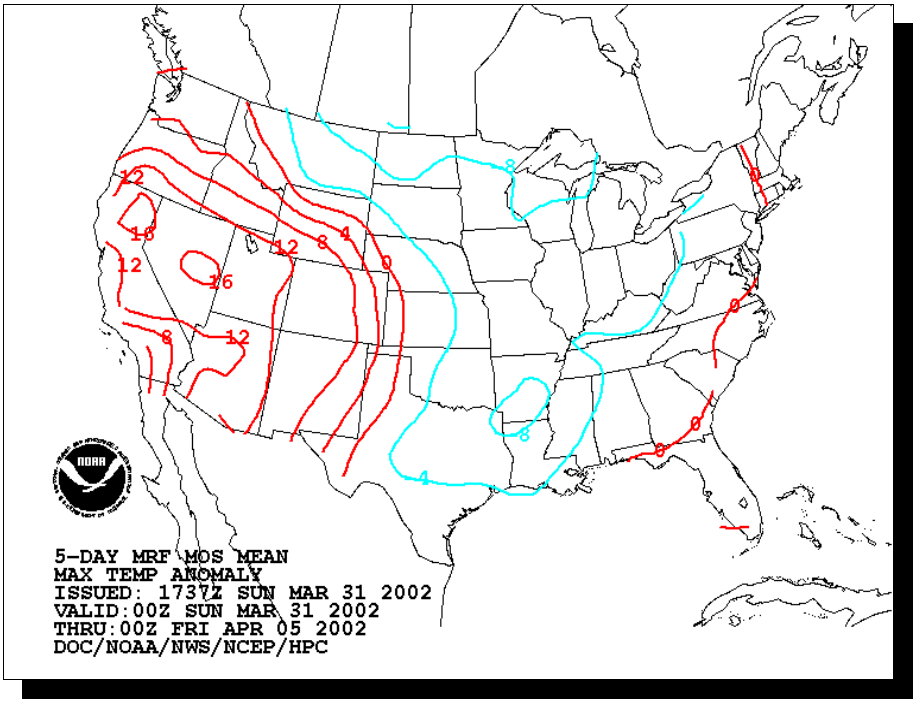

Figure 13. Mean 5-Day Maximum Temperature Anomaly (MOS).

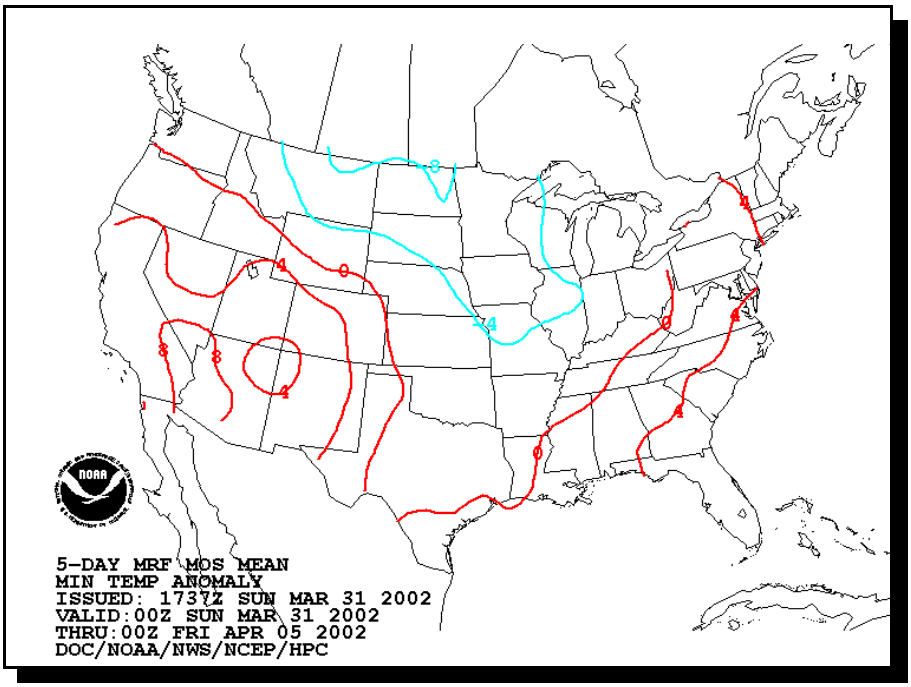

Figure 14. Mean 5-Day Minimum Temperature Anomaly (MOS).

22.4 Updates, Amendments, and Corrections. These products are not updated or amended. Corrections are issued as necessary.